VOL. 7 SUMMER • 1950 NO. 3

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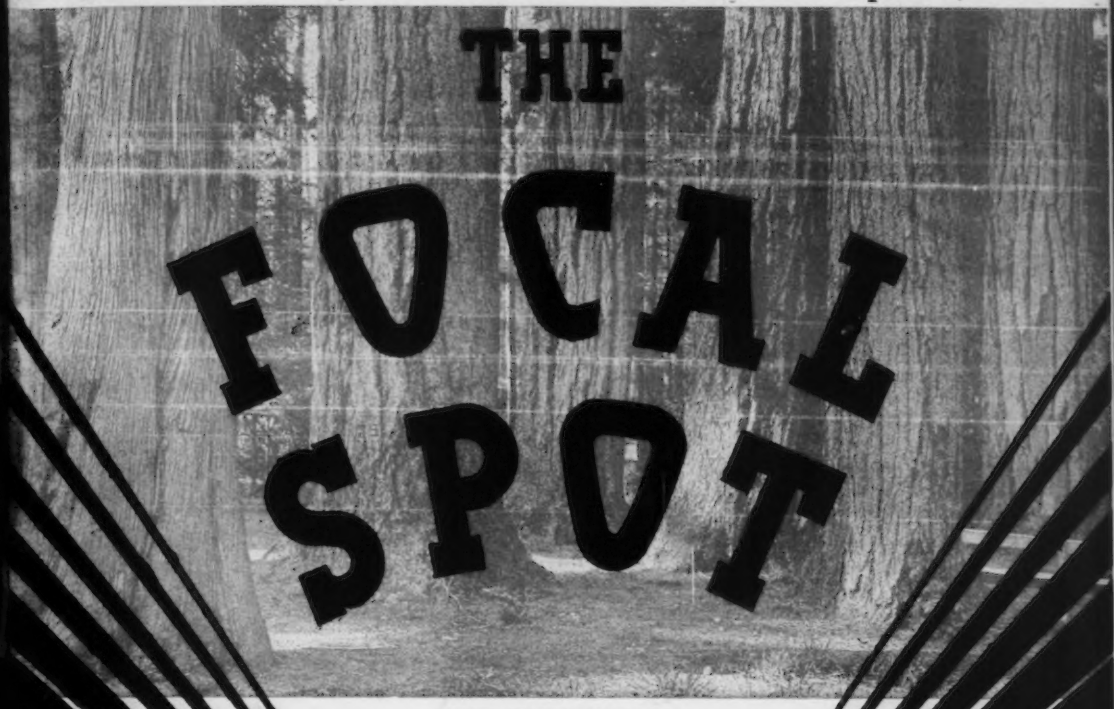

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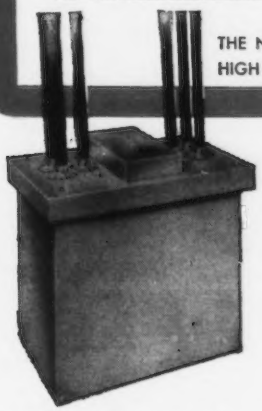

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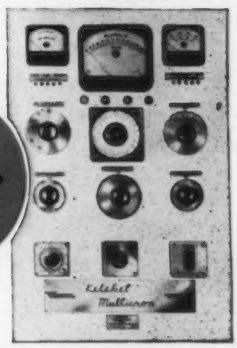

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ALBERTA DIVISION
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ANNUAL CONVENTION

June 2nd saw the opening of the Annual Provincial Convention, with registration at 1 p.m., in the A, B and C salons of the MacDonald Hotel, Edmonton.

A total of fifty-nine delegates registered.

Mr. Roy Hendra introduced Alderman Dr. R. Clare, who welcomed the delegates to the convention on behalf of the City of Edmonton and wished us a successful three days.

Business sessions began with Mr. Stan Kathrens presiding. Miss Vera Peters read the minutes of the last convention, which was held at Calgary, May, 1949. The minutes were adopted as read.

Miss Ruth Schultz, local president, introduced Dr. F. Conroy, who gave us a very enlightening paper on Urology. He emphasized the use of radiography in diagnosis.

Business sessions were continued in the evening, at the Misericordia Hospital. Mr. H. M. Welch presented a revised constitution for approval. A discussion followed and the revised constitution was accepted.

It provides for two new committees, for admission of life members and associate members to the Provincial Division.

Mr. George Hall introduced Dr. F. Day, orthopaedic surgeon, who was guest speaker for the evening. He used illustrations and dealt with the aid technicians may give in orthopaedic surgery by proper technique and speed in doing our part. All enjoyed Dr. Day's informative talk. At closing, Friday evening, refreshments were served.

Saturday morning found the delegates on hand for the film, "Inside Story," shown by Canadian Kodak Co. The film, dealing with the complete production of x-ray films, was most interesting. Sessions continued with reports from the two committees formed at our 1949 convention. The committee dealing with the obtaining of a charter reported the facts from their investigations. This was discussed and voted on to be dealt with at a later date. The committee obtaining information on working conditions reported.

Mr. Stan Kathrens gave a paper on static electricity and left everyone an original souvenir consisting of a static-designed piece of film.

Saturday afternoon brought forth questions to be discussed at the open forum between technicians and radiologists.

Such matters as the following: a program for the training and instruction of students; the drafting of a comprehensive text book for all students; a distinguishing feature for technicians, such as a badge, was suggested.

Mr. Adam Sharawara introduced Dr. G. K. Morton, noted neurosurgeon. Dr. Morton, using radiographs, explained many of the complex features of neurology, including myelography and encephalography.

A nominating committee was formed and it was decided that in all fairness voting should be done by mail.

Mr. H. M. Welch, on behalf of the out-of-town delegates, thanked the Edmonton Branch for the enlightening and successful convention. Mr. Welch also congratulated all candidates of May examinations on obtaining highest standing in the Dominion.

Our business meeting was adjourned.

The delegates, their friends and guests attended the banquet at the MacDonald Hotel Saturday evening. Mr. Stan Kathrens, Provincial President, welcomed the guests and a toast to the technicians was proposed by Dr. Mallett and replied to by Mr. John Welch of Calgary. Mr. Russell McQueen proposed the toast to the radiologists, to which Dr. Duggan responded.

continued on p. 100

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Guest speaker of the evening was Mr. Niel D. Maclean, prominent Edmonton lawyer. Mr. Maclean gave a most entertaining talk which included several interesting law cases. In appreciation of Mr. H. M. Welch's untiring efforts, Mr. George Hall, on behalf of the Society, presented Mr. Welch with the first life membership in our Alberta Branch. After the dinner the guests spent the remainder of the evening dancing.

Sunday morning, buses and cars took the delegates to Elk Island Park for the day. A picnic lunch, softball, swimming and boating brought a pleasant ending to our busy week-end.

A special thank-you to all who helped make this 1950 convention such a success, including our doctors and servicemen.

EDMONTON BRANCH

The April meeting was held at the Misericordia Hospital, our permanent meeting place.

The Ways and Means Committee presented a radio to be raffled for our convention fund. After our business meeting, lunch was served. Our Social Committee has been doing a grand job arranging these little get-togethers after our meetings. All of us feel we have come to know our fellow technicians better. Keep up the good work!

In May, the technicians were invited to hold the monthly meeting at St. Joseph's Hospital. The draw was made for the radio and a technician, Miss Stella Konelsky, won it. Now the Misericordia X-Ray Department works to music.

Final arrangements for the convention were given by Mr. Jack Bateman.

Contributions to our convention fund were gratefully received from four x-ray firms and two film companies.

After the meeting the Reverend Sisters kindly served us refreshments.

We are all very proud of our candidates who were so successful in the May examinations. Congratulations to you all.

We have said good-bye to several of our technicians this spring. Best of luck to Miss Ruby James in her new job at Baker, Oregon, and to Miss Janet Strickland at New Westminster, B.C.

We are sorry to hear we are losing our local president, Miss Ruth Schultz, soon. Best of luck, Ruth, in your new field of action at Sacramento, California.

In closing, thank you, Jack Bateman and your hard working committee, for the successful convention we enjoyed so much.

—MARIE LACEY, R.T.,
Sub-Editor.

CALGARY BRANCH

Twelve Calgary technicians attended the Annual Provincial Convention held in Edmonton, July 2nd, 3rd and 4th. The Edmonton Society had a very well planned programme of lectures and entertainment and are to be congratulated on putting on a most successful convention. At the annual banquet, Mr. H. M. Welch, our Dominion President, was honoured with the first life membership of the Alberta Society.

Miss Lorraine Shearer of the Radium and X-Ray Institute has taken a position in Long Beach, California.

Cpl. L. M. Smith, attached to the X-Ray Department, Colonel Belcher Hospital, has returned from a four-month army course at Houston, Texas.

We are glad to report that Miss Vera White and Miss M. P. Hendrie have recovered from their recent illnesses. Miss Hendrie is at present attending a Business Women's Convention in Halifax.

Mr. S. Katherns will be attending the Dominion Convention as the Alberta delegate.

—ANN MacNEIL, R.T.,
Sub-Editor.

continued on p. 103

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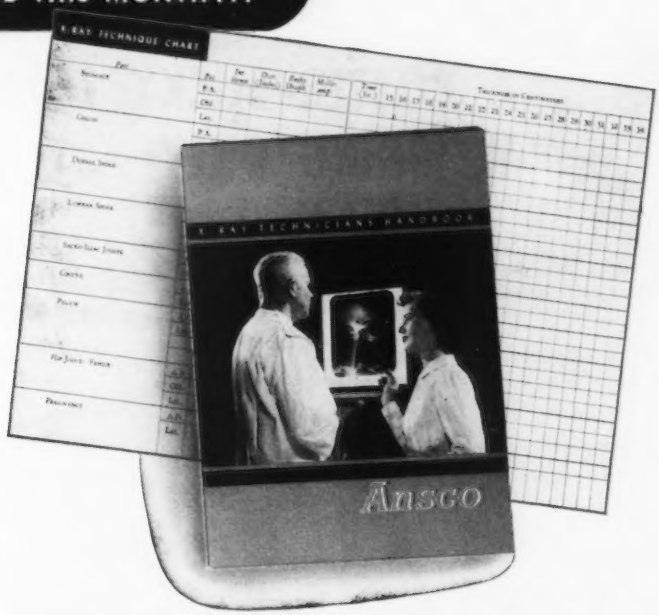

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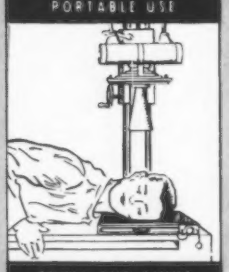

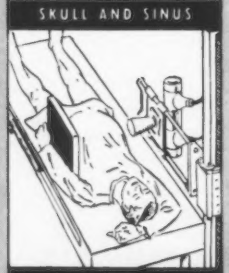

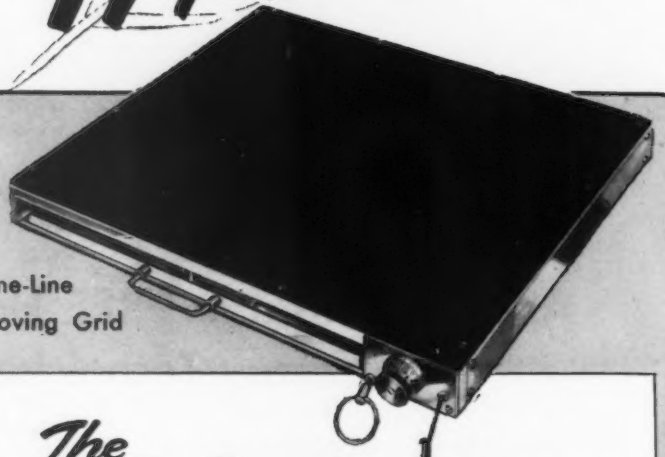

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Journal of the Canadian Society of Radiological Technicians

EDITOR
LESLIE J. CARTWRIGHT, R.T.

Volume 7 TORONTO SUMMER 1950 *Number 3*

High-Kilovoltage Radiography†

E. DALE TROUT, D. E. GRAVES, and D. B. SLAUSON*

Milwaukee, Wis.

In view of the growing interest in the possibilities of high-kilovoltage technique we feel that our readers will find the following article very timely. We are indebted to the Authors and the Editors of RADIOLOGY for kindly granting permission for its republication in these pages.

LIKE the other factors involved in radiography, the kilovoltage factor has been the subject of almost continous study. The equipment available has always had a profound influence on the voltage range over which routine work could be done. At no time has there been any universally accepted technique for any single part of the body. Personal preference and experience have in general been the dominant factors in determining the kilovoltage used in most laboratories.

In its infancy radiography was limited, by the generators and tubes available, to relatively low voltages. With the advent of the alternating current transformer, mechanical rectifiers, and the Coolidge tube, the kilovoltage was increased. The universal type, fine-focus Coolidge tube was frequently used at 100 kv.p. for radiography of the lumbar spine and the chest in large patients.

When the radiator-type tube became available, the voltage was limited to 85 kv.p., a limitation willingly accepted because of the improved definition made possible by the smaller focal spot. For some years, the voltage factor received little attention, as improved films and screens and increased tube current reduced the exposure time required. During this period, there was a general tendency toward higher contrast through the use of reduced voltage. There were some centres of influence, however, where increased latitude was preferred at the expense of contrast, at least for some regions of the body.

In the last few years, the question of the use of higher kilovoltage has become the subject of considerable discussion. This would seem to be the result of a number of contributing influences. Notable are the works of Fuchs, Hodges, Morgan, and their associates. The recent works of Lamerton and of de Waard have contributed to a better understanding of scattered radiation, always of prime importance when the effect of voltage on the radiograph is to be considered.

No small part of the interest in increased voltages can be traced to their use in mass radiography. Further impetus has come from renewed interest in cineradiography and fluoroscopic intensification.

The work reported here had its inception in some work done by Files and his co-workers in 1944 and 1945 during their search for an optimum ratio grid. A dry

† Orignially published in RADIOLOGY, Vol. 52, No. 5, May, 1949. Copyrighted 1949 by the Radiological Society of North America, Inc.

* General Electric X-Ray Corporation, Milwaukee, Wisconsin.

spine and wire mesh suspended in a water phantom were used as test materials. It was soon evident that increased grid ratios (greater than 8:1) were feasible and that they made possible a marked reduction in the amount of scattered radiation reaching the films. Grids of ratios as high as 34:1 were studied. At the increased ratios, the exposure time became so great that, to reduce it to usable limits, higher voltage became necessary. As the voltage was increased, the exposure decreased, as had been anticipated, but at a rate considerably in excess of that expected. The higher ratio grids made possible a high degree of contrast even at much higher voltages than were in general use at the time. As the voltage was increased, one disturbing factor crept into the picture. This was a seeming loss of definition occurring between 110 and 120 kv.p. and persisting at all voltages above this. At the time it was though that this might be caused by some change in the grain characteristics of the intensifying screens. During that period, the study of grain characteristics in film emulsions for use with million-volt radiation in industry was bringing to light some hithertoo unexpected facts, and consideration was given to a possible similar effect at lower voltages with light-sensitive materials. At that point, Files' death brought about a temporary halt in the work.

It had become apparent, however, that higher ration grids were feasible and that a ratio of 16:1 was about the optimum. At that ratio, the improved contrast seemed to just about balance the increased exposure at a practical level.

When work was resumed in 1946, attention was at once focused on the seeming loss of resolution that occurred at voltages above 110 kilovolts. By use of the Morgan method of measuring resolution, it was determined that the use of voltages as high as 135 kv.p. did not result in any change in this respect with any of the screen and film combinations then available.

One possibility after another was explored until it was determined that the apparent loss of definition was due to scattered radiation reaching the back screen from the cassette back and the Bucky tray. A thin sheet of lead on the inside surface of the cassette back was the readily apparent solution. With that barrier passed, there seemed to be no technical reason why higher voltages could not be used to produce radiographs of satisfactory contrast with the higher ratio grids.

Before proceeding further, it was deemed advisable to investigate the changes that might be necessary in equipment to make possible the use of the higher voltages. Fortunately, diagnostic transformers were already available for operation up to 135 kv.p. at reduced cur-

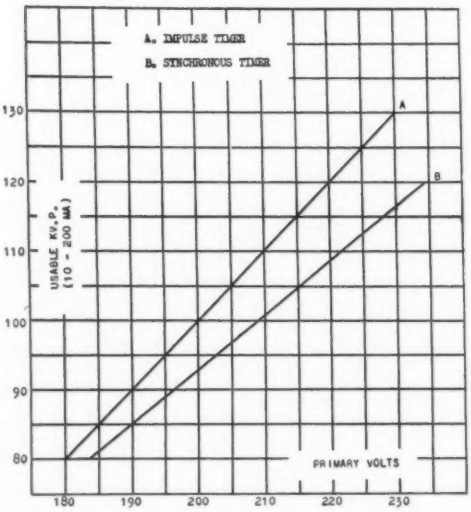

Fig. 1. Primary voltage vs. usable kilovoltage for a high-voltage system using an impulse timer (A) and a synchronous timer (B).

rent for superficial therapy. The behavious of these transformers and their controls was studied using high-voltage, short-time exposures at tube currents up to 200 ma. It was found that with minor modifications of bushings and high-tension switches, the operation of such transformers was satisfactory at voltages up to 130 kv.p., and tube currents up to 200 ma., providing consideration was given to the method of switching used to initiate and terminate the exposure. The so-called "synchronous" timer consists of a timing mechanism driven by a synchronous motor. The motor operates at constant speed, providing accurate time intervals, but the exposure may be started or ended at any point in the voltage wave. If the switching operation takes place at any point other than the zero point in the voltage wave, switching transients are set up in the high-voltage system. At voltages about 120 kv.p. these transients may reach a level that will bring about a failuse of the insulation somewhere in the high-voltage transformer and tube system.

The impulse type of timer is not only driven at constant speed but, in addition, is so designed that it initiates and terminates the exposure at the instant the voltage passes through zero. As a result, no transients are set up, and such a timer makes possible satisfactory operation at any voltage up to the rating of the high-voltage system and the tube with which it is used. The use of the impulse timer is advisable at any voltage where its timing range is adequate. With present tubes and transformers, its use is mandatory for voltages about 120 kv.p.

The data from which this conclusion is drawn are plotted in Figure 1. Here, the primary voltage is plotted against the usable voltage that will not inject harmful transients into the high-voltage system when the two types of switching are used.

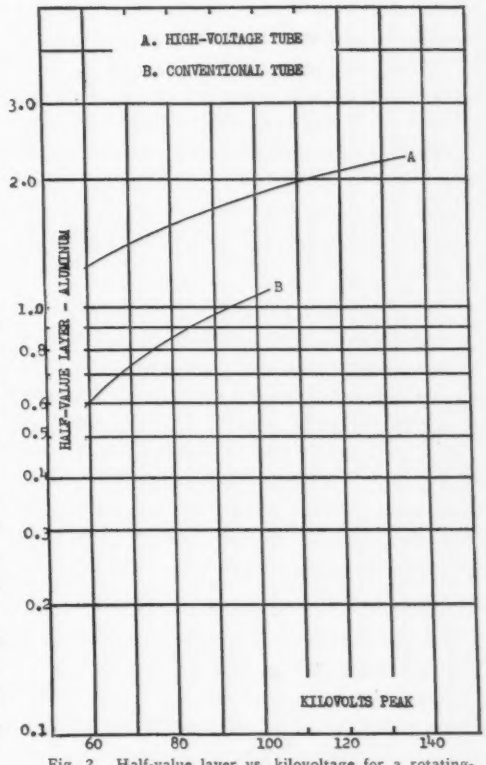

Fig. 2. Half-value layer vs. kilovoltage for a rotating-anode tube of conventional design and a similar tube designed for operation at 130 kilovolts.

Some modification of the x-ray tube and container was found to be necessary. The changes had to do chiefly with improved dielectric conditions. One of these changes was an increase in the thickness of the tube window to decrease the possibility of puncture at the higher voltages. The increase in window thickness, of course, resulted in an increase in the inherent filtration of the tube system. The extent to which this change influences the quality of emitted radiation can be seen in Figure 2. Here, the half-value

layer in aluminum has been plotted against against voltage for a conventional rotating-anode tube and a similar tube designed for operation at voltages up to 130 kv.p. Radiographic studies indicate that this increased filtration does not produce a perceptible change in radiographic quality at voltages above 40 kv.p. Below 40 kv.p. there is a decrease in back-ground density.

At this point the project seemed to be completed. Tubes and energizing equipment for operation at voltages up to 130 kv.p. did not require any radical changes that might make their cost prohibitive. The 16:1 grid made possible excellent contrast. Voltages above 130 kv.p. did not seem warranted, for at 130 kv.p. exposures were so short as to begin to tax present timing methods.

The project was not closed out at this point, however, because the Liebel-Flarsheim reciprocating Bucky became available. Up to this time, the work had been done using the single-stroke Bucky mechanism. The reciprocating mechanism was so attractive from many functional points of view that it seemed worth while to review the whole problem.

It had gradually become apparent that some better method was needed to evaluate the results produced by the different grids and their motivating mechanisms. It was becoming too difficult to evaluate the radiographs visually, and the number of exposures involved prohibited the use of patients as test material.

In a study previously carried out on another problem, it had been necessary to find a test material that could be used for radiographic tests. Water and other liquids imposed handling and container difficulties. Masonite gave a mottled pattern that made it difficult to measure film densities. Dr. Frank Schulze of the Chemical Division of the E. I. du Pont de Nemours Company suggested a material that proved to be so satisfactory that it has been used for all subsequent work. This material is essentially the material used in printers' inking rollers. Its base is brown glue. Properly prepared, it has a density very close to unity. Thickness for thickness, it compares very favorably with average tissue. It can be prepared in sheets that can be stacked to make up a test phantom of any reasonable thickness. One must be prepared to tolerate a not-too-pleasant odor during the curing period.

In reviewing the literature on methods for evaluating grids, one cannot fail to be impressed by the work of Wilsey in the early days of the Potter-Bucky diaphragm. After a review of all the possibilities, it was decided that if modern technology was applied, Wilsey's ideas could be expanded and refined to give a method that could be used to procure a graphic evaluation of the efficiency of any grid system.

Figure 3 shows the method finally used. A number of lead discs ½ inch in diameter were cut from ⅛ inch sheet lead. One of these, designated at 00, was placed directly on top of the cassette. One, designated as 0, was placed on the table top. Others, designated as 1, 2, 3, 4, etc., were placed in the phantom material at correspondingly 1-inch levels, as measured from the table top. Thus, if a 6-inch phantom was being used, disc number 2 was in the phantom 2 inches from the table top, and disc number 6 was on top of the phantom and 6 inches from the table top. By arranging the discs in a spiral in the phantom, their images ap-

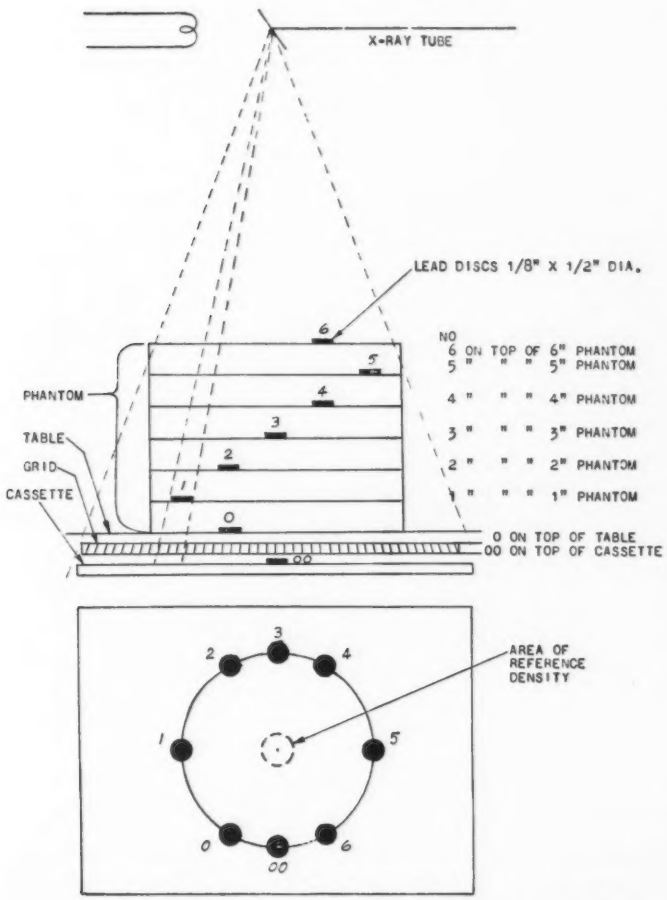

Fig. 3. Diagram of a method used to study the relative efficiency of grids and motivating mechanisms.

peared on the film in a circle. Exposures were made to bring the film density at the centre of this circle to some selected density. Having done this, the film densities under the lead discs were a measure of the scattered radiation reaching the film from the various levels in the phantom. The density under disc 00 was due to chemical fog produced in processing, that under disc 0 was due to radiation scattered into the volume between the table top and the film, that under disc 1 was due to radiation scattered into the volume defined by the disc and one inch of phantom, etc. When the density under disc 00 (fog density) was subtracted from the density under the lead discs, the resulting values became measures of the efficiency with which any grid and motivating mechanism prevented scattered radiation from reaching the film. Furthermore, it provided a measure of the contrast that could be expected at various voltage levels.

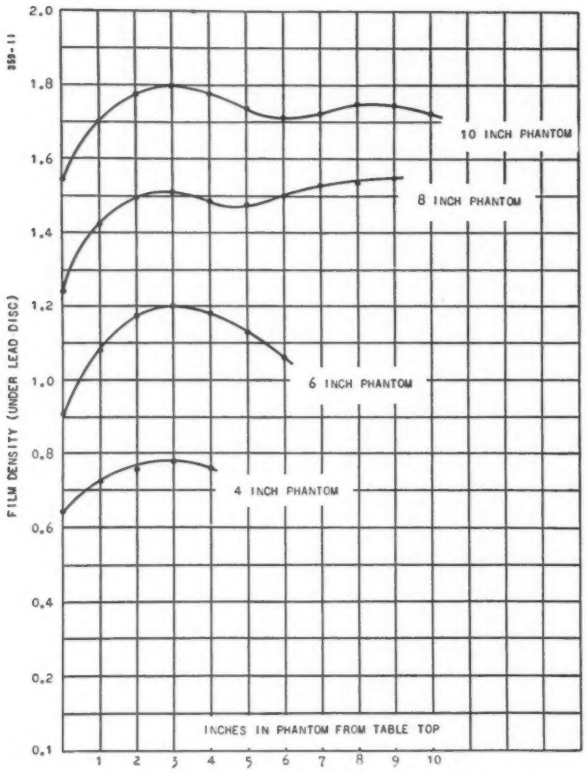

Fig. 4. Results plotted from data taken at 100 kilovolts peak with an 8:1 grid in a single-stroke mechanism and phantom thicknesses of 4, 6, 8 and 10 inches.

Carefully controlled exposures were necessary to bring the reference density in the centre of the circle formed by the discs to an exact reference density. Control of the film processing was one of the most difficult problems encountered. In general, the procedure was to explore a given set of conditions until all factors had been decided upon. A complete series of films covering the variable under study was then exposed and processed at one time.

In Figure 4 are plotted the data from a study made at 100 kv.p. at 40 inches using an 8:1 grid in a single stroke mechanism with phantoms 4, 6, 8, and 10 inches thick. The reference density was 2. As might be expected, the density due to scattered radiation increased as the phantom thicknesses increased. An increase from 4 to 8 inches just about doubled the density under disc number 3. The unexpected thing was that the density always was at a maximum under this disc. This condition prevailed over the more than one hundred radiographs made under all conditions over a period of some months. There may be a simple explanation for it but, if so, the authors made no hit upon it.

Four sets of conditions were studied at voltages of 80, 100, 120, and 135 kv.p.

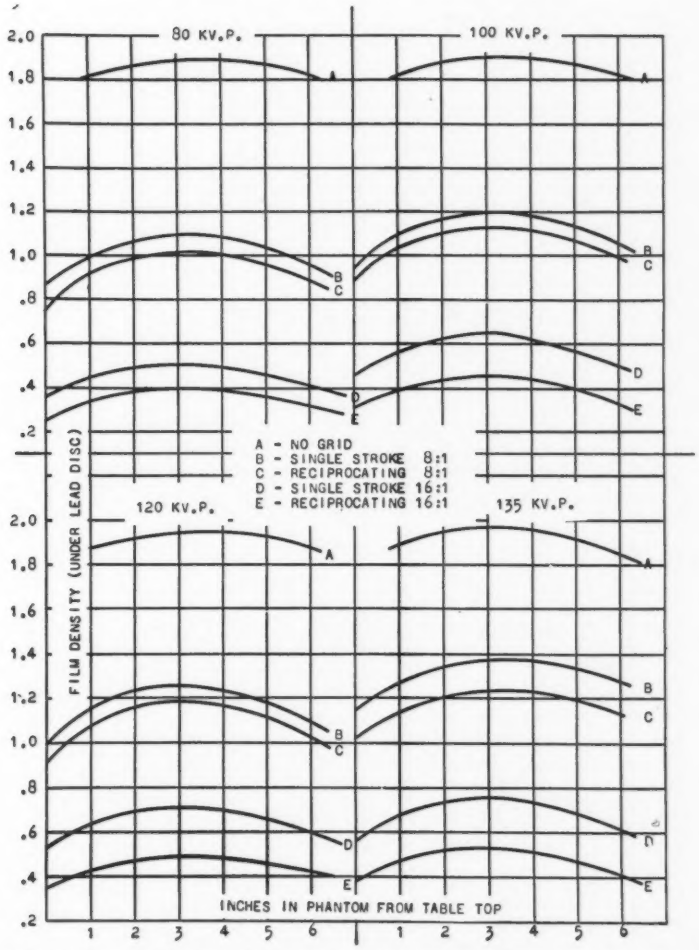

Fig. 5. Data showing film density produced by scattered radiation using 8:1 and 16:1 grids in single-stroke and reciprocating mechanisms.

These conditions involved an 8:1 grid in a single stroke mechanism, the same grid in a reciprocating mechanism, a 16:1 grid in the single stroke mechanism, and a 16:1 grid in a reciprocating mechanism. Medium-speed screens with the usual radiographic films were used. No special chemicals were employed in processing the exposed films.

A set of data taken with a 6-inch phantom with no grid and with the various grid combinations is shown in Figure 5. It is readily seen that the 8:1 grid in the reciprocating mechanism removes more of the scattered radiation than the same grid in a single-stroke mechanism. The same is true with the 16:1 grid, and the improvement with either grid in the reciprocating mechanism becomes more pronounced as the voltage is increased. It is also seen that the 16:1 grid in either mechanism when used at 135 kv.p. pro-

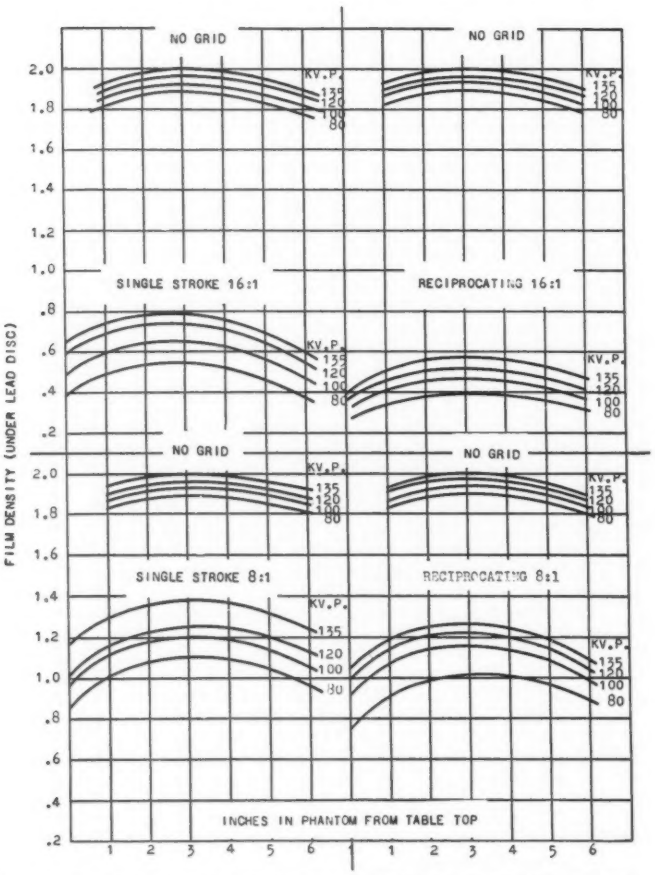

Fig. 6. Film density produced by scattered radiation for each of four grid-mechanism combinations at 80, 100, 120, and 135 kilovolts.

duces a higher degree of contrast than is obtained with the 8:1 grid at 80 kv.p.

In Figure 6 the same data are plotted to bring all the values for a single grid and mechanism together. For purposes of record, a contrast number was obtained by subtracting the density under disc 3 from the reference density. The comparative exposure characteristics of the two grids and two mechanisms are shown in Figure 8 for a 6-inch phantom.

Having determined that the reciprocating mechanism was preferable to the single-stroke mechanism and that the 16:1 grid could be used to produce satisfactory contrast at the higher voltages, the next step was to transfer the experimental results into the making of radiographs on living subjects. In making patient radiographs, densities were matched visually, as would be the case in actual practice.

As might be expected, a pelvis was the first part studied. The results using the 8:1 and 16:1 grids in the reciprocating mechanism are plotted in Figure 9

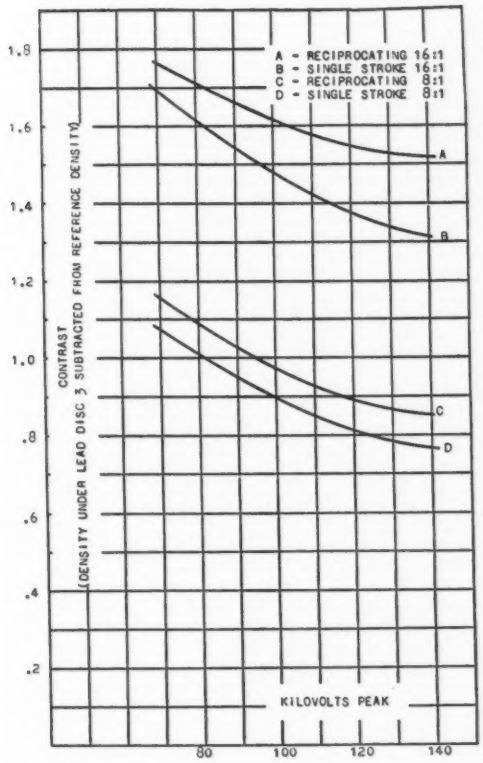

Fig. 7. Contrast number vs. kilovolts peak for 8:1 and 16:1 grids in single-stroke and reciprocating mechanisms.

and tabulated in Table I. The relative exposure for each grid at 80, 100, 120, and 130 kv.p. is shown in the last column. It will be seen that the exposure with the 16:1 grid is about one and one-half times that for the 8:1 grid at any given voltage. For a given exposure at the 75 kv.p. level, the 16:1 grid requires an increase of about 4 kv.p. over the 8:1 grid. This increases to about 12 kv.p. at the 120 kv.p. level.

It is difficult to show other than gross differences in radiographs when they are reduced to print, but it is hoped that Figure 10 will serve to indicate the type of radiographs used in arriving at the data shown.

Similar results obtained from radiographs of a lateral lumbar spine are shown in Figure 11 and Table II. Differences between the comparative exposure factors for the pelvis and the spine are probably due to the inability of the eye to match densities exactly and the difference in contrast levels that further complicate the problem for the eye. In all cases, the densities were probably more nearly uniform than those encountered in actual practice.

The results to be expected with higher voltage in the postero-anterior and lat-

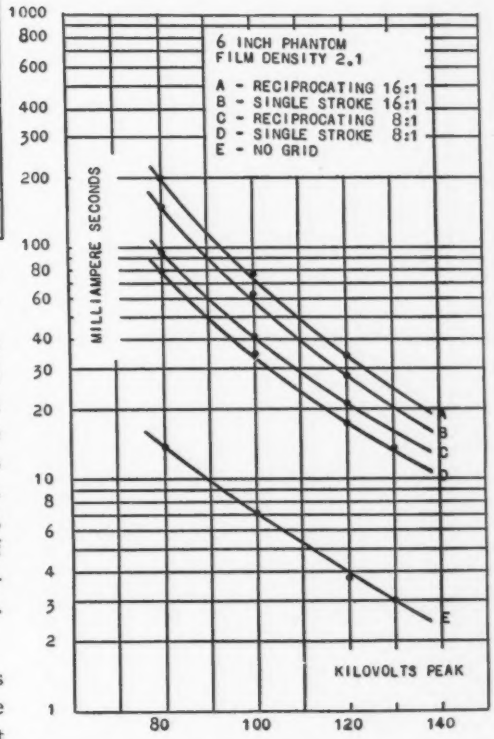

Fig. 8. Comparative exposures in milliampere-seconds vs. kilovolts peak for a 6-inch phantom.

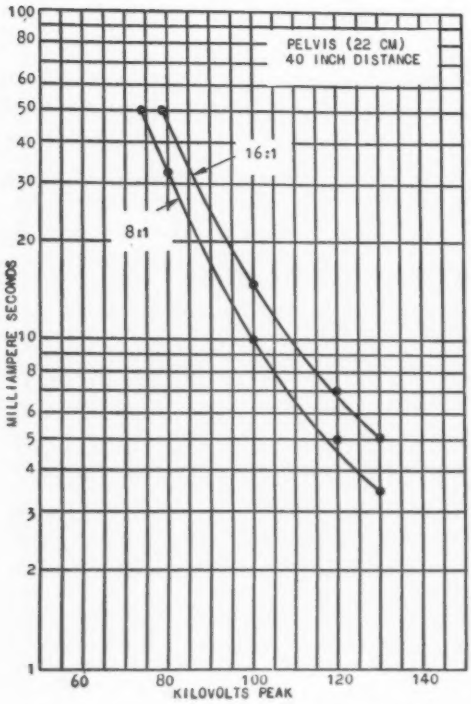

Fig. 9. Exposure vs. kilovolts peak for radiograph of a pelvis using 8:1 and 16:1 grids in a reciprocating mechanism.

eral radiography of the chest were studied without a grid and with a stationary focused grid. The grid used was focused for 42 inches and had a ratio of 5:1. Radiographs were made using a 72-inch distance. The results are shown in Figs. 12 and 13 and Tables III and IV. Some idea of the type of radiographs possible made be had from two such series shown in Figures 14 and 15.

The opportunity to see what might be done with radiography of an extremity could not be ignored. Two series of radiographs of a leg were made without a grid. One series was made using intensifying screens, the other using no-screen film. The results are plotted in Figure 16.

TABLE I: COMPARATIVE EXPOSURE DATA FOR PELVIS (22 cm.)

Gr'd	Kv.p.	Ma.	Factor
8:1	80	32	1.00
8:1	100	10	0.45
8:1	120	4.6	0.14
8:1	130	3.5	0.11
16:1	80	46	1.00
16:1	100	15	0.33
16:1	120	6.9	0.15
16:1	130	5.0	0.11

TABLE II: COMPARATIVE EXPOSURE DATA FOR LATERAL LUMBAR SPINE (30 cm.)

Grid	Kv.p.	Ma.	Factor
1:1	80	200	1.00
8:1	100	75	0.37
8:1	120	39	0.20
8:1	130	30	0.15
16:1	80	400	1.00
16:1	100	125	0.31
16:1	120	55	0.14
16:1	130	40	0.10

To date hundreds of radiographs have been made. The impression persists that films of high quality are possible at the higher voltages. The contrast can be maintained by using the 16:1 grid. The latitude is especially striking in these radiographs. For the first time, it becomes possible to put on the medical films something approaching the qualities obtained in industrial radiography, where heavy lead filter screens are used at voltages up to one and two megavolts. Over a wide range of voltage, the changes are such as to leave little doubt of the value of higher voltages for some types of work. High voltage and the increased latitude that goes with it may not always be desirable. Fortunately, the changes in equipment to make the use of higher voltages possible does not preclude the use of presently accepted techniques to obtain radiographs with the character-

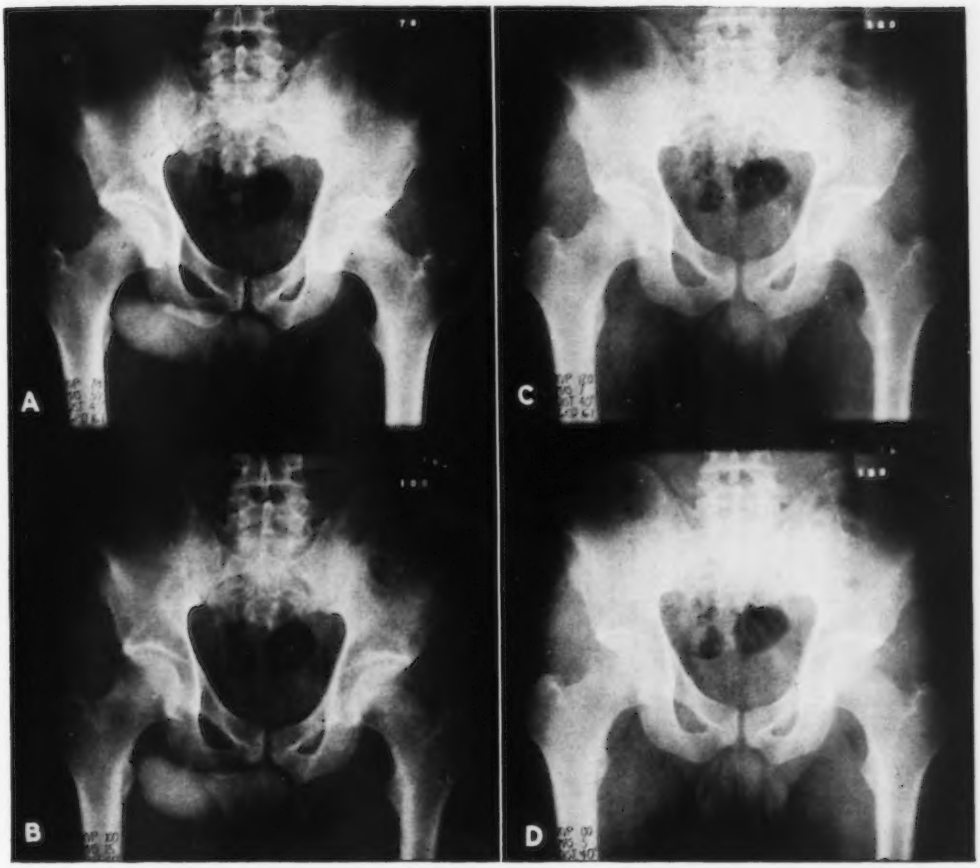

Fig. 10. Radiographs of pelvis using 16:1 reciprocating grid at 78, 100, 120, and 130 kilovolts peak. A. 78 kv.p., 50 ma., 40 in. distance, 16:1 grid. B. 100 kv.p., 15 ma., 40 in. distance, 16:1 grid. C. 120 kv.p., 7 ma., 40 in. distance, 16:1 grid. D. 130 kv.p., 5 ma., 40 in. distance, 16:1 grid.

istics now looked on as desirable. The use of high-ratio grids and higher voltages should be looked upon as a means of obtaining an improved result in certain types of work, this result being obtained with short exposures without loss of contrast.

One of the interesting possibilities which we have not had time to work on is the use of higher voltages with the fine-grain type of intensifying screen usually referred to as "detail" or "high"-definition screen. The use of higher voltages may make the routine use of such screens possible, since the exposure time need not be prohibitive.

Not the least interesting thing on which to speculate is the effect of increased voltage on the exposure which is received by the patient. As pointed out earlier in this discussion, the increased inherent filtration in the tube necessary for high-voltage operation brings about an increase in the half-value layer of the

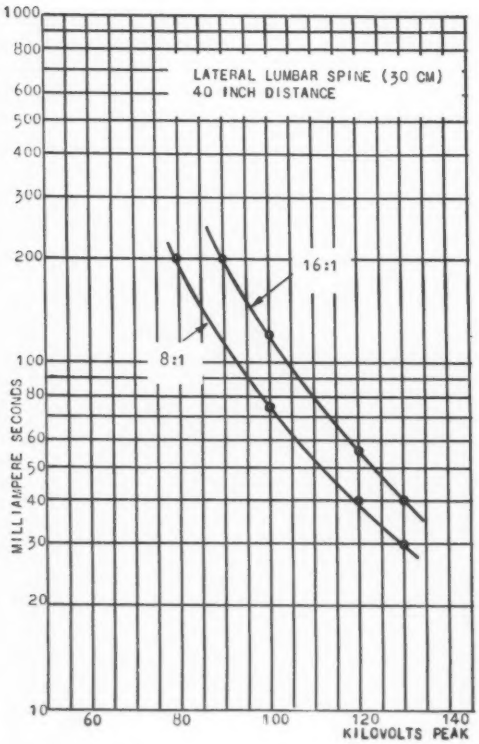

Fig. 11. Exposure vs. kilovolts peak for lateral lumbar spine, using 8:1 and 16:1 grids in reciprocating mechanism.

emitted radiation. This is, of course, accompanied by a decrease in the intensity in roentgens per milliampere-second. The order of this change can be seen in Figure 17, in which is plotted the intensity obtained from the tubes used for the major portion of the work reported here. It will be noted that the intensity from the high-voltage tube is about one-half that from the conventional tube. An analysis of the skin exposure in the case of an 8-inch (20-cm.) pelvis is of interest. The conventional tube used at 80 kv.p. and a 40-inch focal film distance would deliver 0.023 r per miliampere-second to the skin. Using the 8:1 grid, an exposure of about 30 miliampere-seconds would be

TABLE III: COMPARATIVE EXPOSURE DATA FOR POSTERO-ANTERIOR CHEST RADIOGRAPH (22 cm.)

Grid	Kv.p.	Ma.	Factor
None	60	10	1.00
None	80	3	0.30
None	100	1.2	0.12
None	120	0.6	0.06
None	130	0.5	0.05
5:1	80	6	1.0
Stationary grid	100	2.5	0.42
	120	1.4	0.23
	130	1.0	0.06

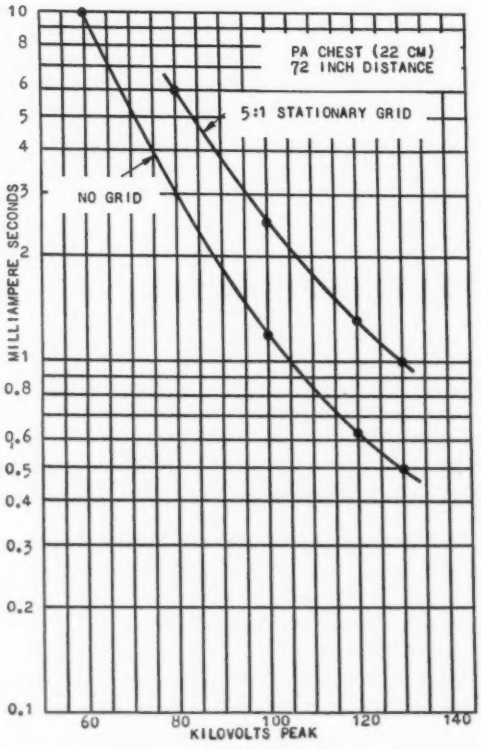

Fig. 12. Exposure vs. kilovolts peak for postero-anterior chest radiograph.

required, bringing the dose to the skin to about 0.7 r.

If the high-voltage tube and the 16:1 grid were used at 130 kv.p., the intensity would be approximately 0.019 r per milli-

TABLE IV: COMPARATIVE EXPOSURE DATA FOR LATERAL CHEST RADIOGRAPH (32 cm.)

Grid	Kv.p.	Ma.	Factor
None	80	20	1.00
None	100	8	0.40
None	120	4	0.20
None	130	3	0.15
5:1	80	40	1.00
Stationary grid	100	16	0.40
	120	8	0.20
	130	6	0.15

ampere-second. The exposure would be about 5 milliampere-seconds and the skin dose only 0.095 r. Something approaching the same result could, of course, be had by adding aluminum filter to the conventional tube.

The skin dose may not be the whole story, however; if effects at a depth are to be considered, the penetrating qualities of the radiation must be taken into account. In Table V will be found data taken using the two types of tubes and the phantom employed throughout these studies. It will be seen that through four inches of the material, the transmission will be 2.5 per cent at 80 kv.p. with the conventional tube and 5.8 per cent at 130 kv.p. with the high-voltage tube. Under these conditions in the radiography of the pelvis, previously mentioned, the transmitted dose through four inches would be 0.0175 r for the 80-kv.p. technique and only 0.0055 r for the 130-kv.p.

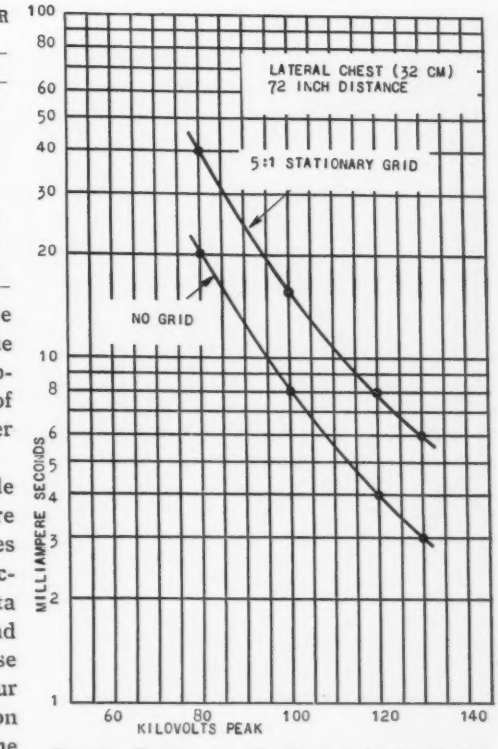

Fig. 13. Exposure vs. kilovolts peak for lateral chest radiograph.

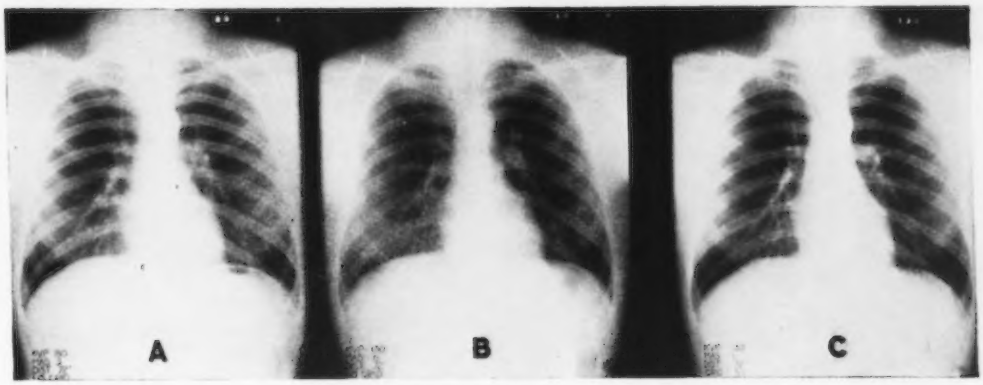

Fig. 14. Postero-anterior radiographs of chest. A. 80 kv.p., 3 ma., 72 in. distance, no grid. B. 130 kv.p. 1/2 ma., distance 72 in., no grid. C. 130 kv.p., 1 ma., 72 in., 5:1 grid.

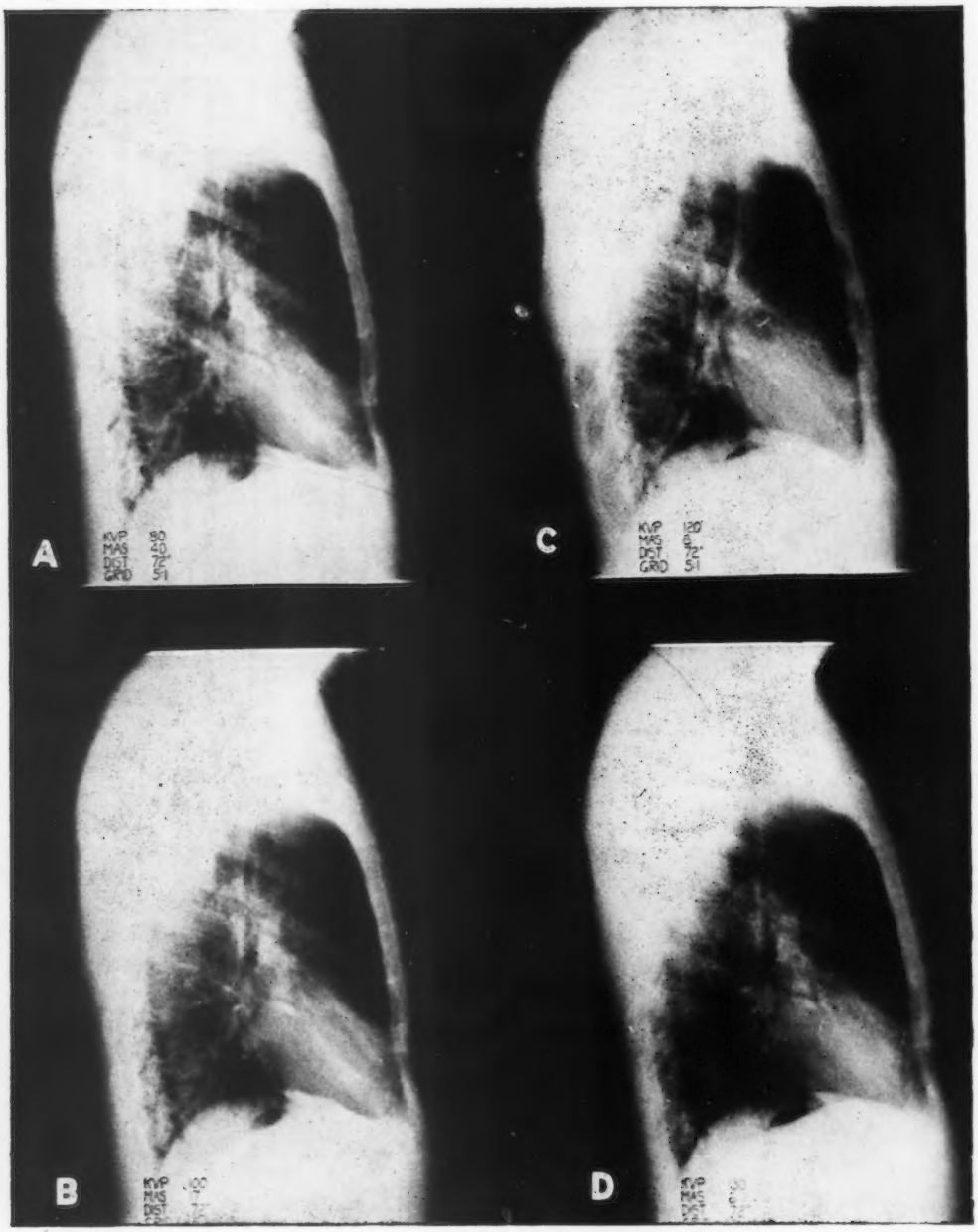

Fig. 15. Lateral radiographs of chest. A. 80 kv.p., 40 ma., 72 in. distance, 5:1 grid B. 100 kv.p., 17 ma., 72 in. distnce, 5:1 grid. C. 120 kv.p., 8 ma., 72 in. distance, 5:1 grid. D. 130 kv.p., 6 ma., 72 in. distance, 5:1 grid.

TABLE V: TRANSMITTED RADIATION THROUGH PHANTOM

Phantom (Inches)	Per Cent Transmission							
	Conventional Tube			High-voltage Tube				
	60 kv.p.	80 kv.p.	100 kv.p.	60 kv.p.	80 kv.p.	100 kv.p.	120 kv.p.	130 kv.p.
0	100	100	100	100	100	100	100	100
1 (2.5 cm.)	17	24	25	25	28	34	36	37
3 (5.1 cm.)	6	10	12	9.4	12	16	17	18
3 (7.7 cm.)	2.6	4.8	6	4.0	6.0	8.0	9.4	10
4 (10.0 cm.)	1.2	2.5	3.4	1.8	3.0	4.2	5.4	5.8
5 (12.7 cm.)	0.56	1.3	2.0	0.84	1.6	2.5	3.2	3.4
6 (15.3 cm.)	0.27	0.7	1.2	0.40	0.86	1.5	1.9	2.1
7 (17.9 cm.)	0.13	0.4	0.7	0.19	0.48	0.90	1.15	1.25
8 (20.4 cm.)	.....	0.2	0.44	.....	0.26	0.57	0.70	0.78

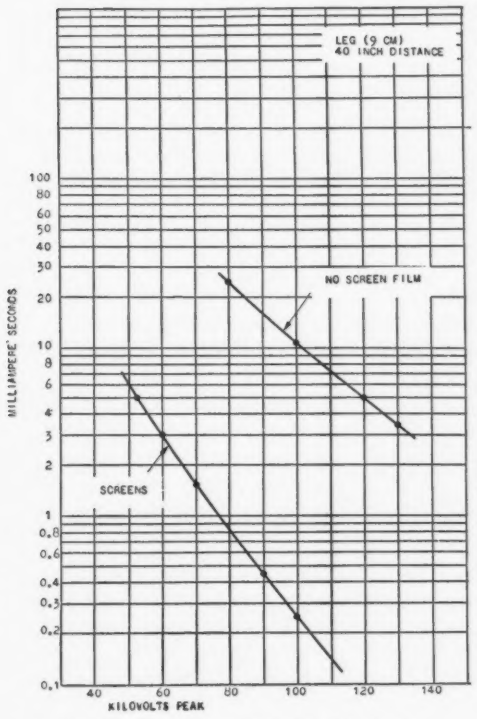

Fig. 16. Exposure vs. kilovolts peak for leg.

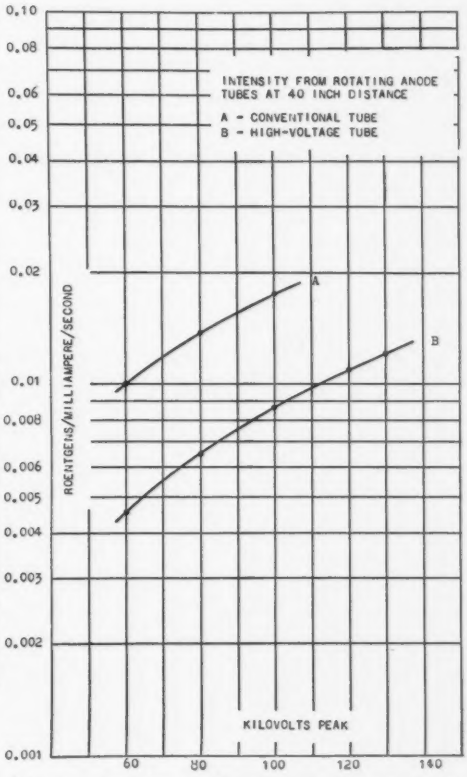

Fig. 17. Intensity vs. kilovolts peak for conventional and high-voltage rotating-anode tubes.

technique. From this, it would seem that from the standpoint of both the skin dose and the dose to parts below the surface the evidence is in favor of the higher voltage even when the 16:1 grid is used.

In conclusion it can be said that:

(1) The use of voltages up to 130 kv.p. is possible without major redesign of equipment.

(2) The use of higher ratio grids in a reciprocating mechanism makes it pos-

sible to use the higher voltages without a loss of contrast.

(3) The use of the higher voltages increases the latitude to a marked degree.

(4) The use of the higher voltages reduces the exposure to such a level that large patients can be radiographed with shorter exposures than was previously possible.

(5) The patient dose is reduced by the use of higher voltages.

NOTE: The authors are indebted to A. L. Pace, who did the work on grid evaluations.

4855 Electric Ave.
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REFERENCES

FUCHS, A. W.: Optimum Kilovoltage Technique in Military Roentgenography. Am. J. Roentgenol. 50: 358-365, September 1943.

FUCHS, A. W.: Military Photoroentgen Technique Employing Optimum Kilovolt (Peak) Principles. Am. J. Roentgencl. 53:587-596, June 1945.

HODGES, P. C.: Development of Diagnostic X-Ray Apparatus During the First Fifty Years" Radiology 45: 438-448, November 1945.

MORGAN, R. H.: Control of Diagnostic Quality in Roentgenograms of the Chest. Am. J. Roentgenol. 50: 149-161, August 1943.

LAMERTON, L. F.: A Theoretical Study of the Results of Ionization Measurements in Water with X-Ray and Gamma-Ray Beams. Methods of Calculation. Brit. J. Radiol. 21: 276-286, June 1948.

de WAARD, R. H.: Approximate Theoretical Solution of a Problem of Scattering of Soft X-Rays (λ between 0.25 and 0.56 A.) and Its Consequences in Medical Radiology. Brit. J. Radiol. 21: 454-463, September 1948.

FILES, G. W.: U.S. Patent 2,435,823, Feb. 10, 1948.

WILSEY, R. B.: Efficiency of the Bucky-Diaphragm Principle. Am. J. Roentgenol. 9:58-67, January 1922.

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Results of May, 1950, Exams., C.S.R.T.

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Role of the Technician in Gastro-Intestinal Room

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INTRODUCTION

THE role of the technician in the gastro-intestinal room is to aid the roentgenologist in fluoroscopy and spot-film radiography, and she must also take the larger films with the Bucky diaphragm and overhead tube. To do this work in an efficient manner it is essential that the technician have a comprehensive knowledge of the methods used and a good understanding of the problems of the roentgenologist.

HISTORY

Therefore, before discussing any details of the role of the technician, a brief history dealing with the application of x-rays in the study of the gastro-intestinal tract will be given. Shortly after Roentgen's epochal discovery experiments were conducted with opaque media to visualize the organs of the gastro-intestinal tract, because they are of the same density as the surrounding structures. Roentgenological procedures were first applied to the study of the digestive tract by Professor Cannon [1] of Harvard in 1896. The first substances used were bismuth subnitrate and subcarbonate.[2] Barium sulphate later replaced the bismuth salts for this purpose as it is purer, less expensive and casts a perfectly satisfactory shadow. It is now in almost universal use. It does not interfere with the function of the organs since it is not absorbed and it is therefore harmless.

ANATOMY

It is necessary that the technician have adequate knowledge of the anatomy of the various organs of the alimentary tract. This tract is divided into the (a) esophagus, (b) stomach, (c) small bowel and (d) large bowel.

(a) The esophagus is seen as an animated drainage tube about ten inches long which conveys food from the pharnyx to the stomach. It is the narrowest, and at the same time one of the most muscular parts of the alimentary tract. It lies posterior to the trachea and the heart and just in front of the vertebrae. In the lower part of its course it sweeps in front of the aorta, passing through the diaphragm at the left of the median line to end in the stomach.

(b) The stomach lies in the superior part of the abdomen just under the diaphragm on the left of the median line to end in the stomach.

The opening into the stomach is called the cardiac orifice, and the opening into the small intestine is the pyloric orifice. The right border or lesser curvature is short and more or less concave, the left border or greater curvature is long and convex.

The stomach is composed of the body, the fundus, and a constricted portion to the right, the pylorus. The mucuous membrane is smooth when the organ is full, but is thrown into folds, called rugae, when empty.

There are many types of stomachs. The dominant types are: steerhorn, and fish-hook or J-shaped.

(c) The small bowel is a muscular tube about twenty feet long. It is divided into three portions: the duodenum, the jejunum and the ileum. The duodenum is the shortest of the three and is arranged in a horseshoe pattern. The bile and pancreatic ducts open into the duodenum. The jejunum and ileum continue from the duodenum until the latter connects with the large intestine at the cecum.

(d) The large bowel is divided into the cecum, colon and rectum. The cecum is the portion of the large bowel below the attachment of the ileum. It is a blind pouch from the lower portion of which projects the appendix. At the opening of the ileum into the cecum is the ileocecal valve which controls the passage of the intestinal contents into the cecum.

The colon is divided into the ascending, transverse, descending and sigmoid portions.

The ascending colon passes upward on the right of the abdomen from the cecum to the anterior surface of the liver where it bends to form the transverse colon. This bend is called the hepatic flexure. At the spleen the transverse colon bends downward to become the descending colon. This bend is called the splenic flexure. Farther on the colon curves and extends down where it forms an S-shaped curve called the sigmoid, from the Greek letter sigma (S). The sigmoid colon connects with the rectum.

The rectum descends along the hollow of the sacrum and coccyx to end in the lower opening, the anus. The opening is guarded by two sphincters, internal and external.

PREPARATION OF PATIENT

After this brief review of the anatomy, the preparation of the patient for examination will be considered.

A properly prepared patient is essential for a successful examination. The preparation varies somewhat according to the region being examined. Preferably, the examination is carried out in the morning, for a patient with an ulcer may experience considerable distress if not examined before the luncheon hour.

It is usually the duty of the technician to see that the patient receives the proper instructions the day preceding the examination, unless the referring physician has already done so. For an esophageal examination no preparation is necessary, but it is preferable to have the patient fasting in case it is necessary to examine the cardiac end of the stomach. For stomach and small bowel, the patient is told to abstain from food and drink from midnight on. After the initial examination the patient is again told to remain fasting until the 3 hour film is taken. If on this roentgenogram the stomach is seen to be empty, the patient may eat. But if it is not empty, no food may be taken until after the 6 hour film has been taken.

For examination of the colon, 3 tablespoons of castor oil are given the day before. Castor oil is very efficient and less irritating than many other cathartics. It has been recommended by some that an anti-spasdomic drug, such as belladonna, may be given, but the writer has had no experience with such drugs. A light breakfast may be taken that morning.

For examination of the esophagus, stomach and duodenum, a medium made

up of barium and water is used. In the department where the writer is training a mixture of equal parts by volume of barium and water is used for practically all adults. It is important to measure the parts separately by volume before mixing. This insures a mixture of sufficient density so that with the first mouthful, gastric rugae will be well visualized. As the first mouthful enters the stomach the roentgenologist can see whether or not hypersecretion or food residue is present. The entire stomach is examined very carefully with this small amount of barium and one or two films are taken. Sometimes for examining the esophagus a thicker mixture should be available.

Modifications are made for children and the new born. For children, chocolate malted milk may be given. This flavored drink is taken with more relish than the unflavored mixtures. Some object to the flavored mixtures on the grounds that they change the mucosal pattern and excite secretory activity. Pendergrass [3] has shown that these flavored mixtures influence the pattern of the intestine; but an appreciable change does not occur in the esophagus, stomach, or duodenal bulb. Infants are usually examined for evidence of anomaly or pyloric stenosis. Sante [7] recommends that if the baby is on a four-hour schedule, a meal composed of two ounces of barium sulphate be added to the regular formula. After an ounce or more is given, several views are taken. The swallowing mechanism and the esophagus are observed by having the baby drink during the fluoroscopic observation.

For barium enemas, ten ounces of barium sulphate are mixed with one and one-half to two quarts of lukewarm water. This should not be placed in the enema can until ready to be administered, for the solution may settle and clog the rubber tubing. K-Y lubricant should be applied to the nozzle. A greasy lubricant, such as vaseline, should not be used with rubber nozzles because of its deteriorating effect.

For older patients and those who have difficulty in retaining enemas, a Bardex bag is used. This consists of a double-lumen tube, one of which communicates with a balloon. After insertion into the rectum the balloon is inflated by the pressure bulb. This inflation is carried out by the roentgenologist under fluoroscopic control. The inflated balloon prevents the expulsion of the tube and enema which is administered through the inner lumen.

If the enema fluid has to stand over a period of time, it should be reheated until it is of the right temperature, and the air allowed to escape from the tube before inserting it into the rectum. When the rectum is fully distended, the patient's discomfort may be relieved if the administration of the enema is suspended for a few minutes.

ROUTINE EXAMINATION OF THE PATIENT

The work of the technician in the fluroscopic room will now be outlined.

The techician informs the roentgenologist of the number of patients for gastric and colonic examination and provides whatever history there may be on the case. The report of any previous examination is attached to the fluoroscopic work sheet.

The handling of patients is usually carried out as far as possible in the order

of their time of arrival at the department. First, the gastric cares are examined, followed by those for colonic examinations. If another fluoroscopic room is available it saves a great deal of time to have the barium enemas done in that room.

The patient is ushered into the fluoroscopic room by the technician and introduced to the roentgenologist in a clear, distinct voice.

Many patients who enter the fluoroscopic room are worried, and that frame of mind, whether it be obvious or concealed, hinders the examination by its effects on peristalsis. Although the examiner can see fairly well, the patient is almost blind when entering the dimly and mysteriously lighted room, especially if he has just come from brightly lighted surroundings. The patient should be reassured to relieve his apprehension.

After the measurements have been taken and the technique set by the technician, the examination is commenced with the patient standing in front of the upright fluoroscopic table. When the roentgenologist is ready, the barium drink is handed to the patient. In our department, luminous plastic glasses have been found to be particularly satisfactory in facilitating the passing of the barum to the patient while the room is in darkness. The technician should be on the alert to see that only the desired amount is taken and the glass removed at the proper time. When a small amount of barium has been taken the mucosal markings are best visualized. When large amounts have been taken, the stomach is seen in silhouette and no mucosal detail is visible. As the first mouthful is swallowed, its course is followed down the esaphagus.

Different procedures are followed by different roentgenologists, depending upon individual preference. The methods used by Dr. E. A. Petrie will be given.

No routine views are suitable for all cases. At least two are taken standing. Then views are taken of the duodenal bulb: one without pressure, one with pressure and a right and left oblique. Sometimes many more views are taken. An antero-posterior view is taken with the patient reclining at a 45° angle, and two or three are taken with the patient prone. The prone views are taken by the technician with the overhead tube. Sometimes additional spot films are taken of the stomach with a special diaphragm to better visualize suspected areas.

Occasionally the duodenal bulb will not fill, and in such case it is necessary for the patient to drink a second glass of barium. If this manoeuvre fails, the patient is sent to the dressing-room to wait for five or ten minutes. Another patient may be examined before seeing the original patient.

Films are taken at 3 and 6 hours after the administration of the barium meal. If the roentgenologist is interested in the small bowel, he may order hourly films. A film is taken routinely 24 hours after the first drink of barium and sometimes even after an interval of 72 hours. These last two views are taken to ascertain the presence of diverticula or colonic stasis.

Sometimes the roentgenologist will recommend that a Barium Enema be given after examination of the 24 or 48 hour film. During this enema at least one view of the sigmoid is taken by the roentgenologist while the sigmoid is filling. After the colon is filled satisfactorily pre-evacuation films are taken, followed by a post-evacuation film. Valu-

able views occasionally indicated are prone and lateral. If there is a great deal of barium remaining in the colon, the roentgenologist may request another film at a later hour.

For detailed examination of the esophagus the patient is first examined in the upright position. A small "R" is placed on the grid (right side of the patient) so that when the films are developed, the "R" will designate the patient's right side. Both a thin and a thick mixture are used. The former is given first to investigate the process of swallowing. This is followed by the latter, which must be thick enough to cling to the walls of the esophagus, and to descend slowly when the patient is upright. In this department, occasionally bread and barium to form a thick mush is used. Several views are also taken in the supine position and the barium is administered to the patient through a drinking tube.

SPECIAL EXAMINATIONS

Special procedures, such as small bowel enemas and double-contrast enemas, are occasionally of value but it is beyond the scope of this paper to discuss them in detail.

EQUIPMENT

Proper equipment is essential and will now be discussed briefly.

The fluoroscopic screen was, of course, primarily designed for fluoroscopy. In addition, mechanical devices are built into the apparatus so that (a) a film can be substituted quickly for the fluoroscopic screen, (b) fluoroscopic settings can be changed to filming settings at the instant the film is substituted for the fluoroscopic screen, and (c) compression can be applied to the stomach wall in case of abdominal work.

The modern instrument consists of a motor-driven tilting table on which is built an assembly which supports the tube, the fluoroscopic screen and the carriage for holding the film. Some form of filming fluoroscope (so-called spot-film device) is essential.

The films used in our department are size 6½ by 8½ inches. A stationary grid is often moved into position as a fluoroscopic grid. For examination of the esophagus, usually one-half of the film is exposed and then the other half. Also two exposures can be made along the bottom of the film, then the film is rotated so that the unexposed top becomes the bottom, and two more exposures are made. On the finished film, exposures on opposite ends are upside down in relation to each other. These four exposures are very satisfactory for various views of the duodenal bulb.

The films are marked by an electronic printing device. On the label is printed the name of the hospital, patient's name and number and the date.

TECHNICIAN'S DUTIES

The technician should be familiar with the routine procedures carried out by the roentgenologist and also be ready to assist him whenever necessary. The technician's duties are many:

1. The apparatus must be in perfect perfect order.
2. The patient must be properly prepared.
3. The patients ushered into the darkened room.
4. The contrast materials which must be used, prepared and dispensed.
5. The wants of the patient attended to during the examination.

6. The table-switch manipulated during the examination.
7. The roentgenographic exposures taken as recommended by the roentgenologist.

The alert technician can do much to place the patient in the proper position for the various views.

It is essential to have the glasses of barium, drinking tubes, cellu-wipes and emesis basin placed on a tray which can easily be reached. A flash-light with a red filter may also be placed on the tray to be used for various things, such as changing techniques for different views, finding calipers.

If more than one technician is working in the gastro-intestinal room, certain duties should be assigned to each one. The ushering in of patients, introducing them to the doctor, taking measurements, setting techniques and manipulating the table switch could be allotted to one, while the other should see to the mixing of the barium, changing films, transferring films to and from the developing room and taking the roentgenographic exposures.

Finally, it might be worthwhile mentioning that the technician should be careful to reveal no information to the patient as to the roentgenologists findings. There is an old Roumanian proverb: "Man is endowed with two eyes and one tongue in order that he may see twice as much as he says."

BIBLIOGRAPHY

BOOKS

1. Clark, K. C.—POSITIONING IN RADIOGRAPHY. London: William Heinemann, Medical Books, Ltd., 1949.

2. Golden, Ross—DIAGNOSTIC ROENTENOGRAPHY. New York: Thomas Nelson & Sons, 1947.

3. Harrison, Bede J. Michael—TEXTBOOK OF ROENTGENOLOGY. Baltimore: William Wood & Co., 1936.

4. Hodges, Fred Jenner—THE GASTRO-INTESTINAL TRACT. Chicago: The Year Book Publishers nc., 1944.

5. Merrill, Vinita—ATLAS OF ROENTGENOGRAPHIC POSITIONS. St. Louis: The C. V. Mosby Co., 1949.

6. Millard and King—HUMAN ANATOMY AND PHYSIOLOGY. 2nd ed. Philadelphia: W. B. Saunders Co., 1947.

7. Sante, L. R.—MANUAL OF ROENTGENOLOGICAL TECHNIQUE. 14th ed. revised. Ann Arbor: Edward Brothers, Inc., 1948.

8. Surgeon-General of the Army—THE UNITED STATES ARMY X-RAY MANUAL. 2nd ed. New York: Paul B. Hoeber, 1933.

9. Templeton, Frederick E.—X-RAY EXAMINATION OF THE STOMACH. Chicago: The University of Chicago Press, 1944.

ARTICLES

Alice, Sister Mary—"The Technician, a Help or a Hindrance," THE X-RAY TECHNICIAN, XII (November, 1940), 89.

E. Dale Trout Honored by Alma Mater

A General Electric X-Ray official has received outstanding recognition from one of the nation's well-known colleges recently, with the award of an honorary Doctor's Degree in view of his major contributions to science.

He is E. Dale Trout, assistant to the Vice-President, who was honored by his alma mater, Franklin College, at Franklin, Ind., from which he received his Bachelor of Science Degree in 1922.

Associated with GEXCO for over 21 years, he is an internationally-recognized authority in the field of both medical and industrial x-ray, and in radiation measurement. He is the author of numerous technical papers on these subjects, and is a member of the American Physical Society and the British Hospital Physicists Association.

Mr. Trout has worked closely with medical officials and institutions throughout the world, and last year made a trip in which he visited all cancer centres and radiation research laboratories in Great Britain and Sweden.

He is particularly well known for his studies of the physical characteristics of radiation from beryllium-window tubes, which have made possible the production of x-rays of phenomenal intensity and range of wavelength.

A Check-List for the Radiographic Room

By SISTER MARY DAVID, R.N., R.T.
The Halifax Infirmary, Halifax, N.S.

TO speed up service, correlate work done in the different rooms, and avoid disorders and errors, a system of "checking" was worked out and has been in use here for several years. A description is here offered in the hope that it may be of use to other technicians confronted with similar problems.

An ordinary manuscript book or "scribbler" of the ten-cent variety is ruled in appropriate columns and kept on the accessory table in the main radiographic room.[1] This book contains, in abbreviated form, a pencil copy of the patient's register, and serves as a "check-list" for integration of the work of the several technicians in the department. It avoids the delay and embarrassment of "overlooking" some patient, or each technician thinking the other was looking after him. It is also helpful in locating wet films for doctors, as it gives an approximate idea (to the initiated) of the stage of processing in which the required films may be found. In order to explain the simple code used, we now refer to the illustrations, in which the same small section of a page in the book is shown, as it appears at different hours in the day. (Names here given are, of course, fictitious.)

8 a.m.: Requisitions have been accumulating during the night, for house-patient services. These are numbered and copied directly into the work-book by the chief technician. The Registrar is meanwhile admitting some of the out-patients for gastrics and cholecystograms — these requisitions are likewise numbered and copied into the book. Fluoroscopy record sheets,[2] similarly numbered, are prepared by the student on that service. The book is now taken to its appointed place and the radiographers proceed with scout films.[3] etc., checking off as they go. The Registrar is left in comparative "peace" to write up the complete entries in the Day Book and summary, look up records and previous films, answer telephone inquiries, make appointments, and a thousand other details. From the time the initial morning list is made up, the Registrar or her substitute is responsible for entering any further requisitions on the tech-

Thursday, March 2/50

Dr.	Patient	Exam.	Rm.	#
Brown	Mrs. Mahon	G.I. Series	325	58819
Smith	Mrs. Miller	G.I. Series	428	58820
Williams	Miss Tennell	G.I. Series	O.P.	58821
Owens	Mr. Ainsley	G.B(dye) + EKG.	304	58822
Elliott	Mrs. Woods	Colon + Chest	249	58823
Bent	Mr. Lewis	Stomach	O.P.	58824
Macd.	Mr. Dixon	Chest (portable)	250	58825
Owens	Baby Johnson	Heart (fluoro + films)	501	58826
Robinson	Mrs. Patterson	Lum. Spine + Pelvis	406	58827
Daley	Mr. Brandon	Both knees	OP	58828

Fig. I. "8 a.m."

nicians' book at the time each patient is admitted.

10 a.m.: The book (same section) now looks something like this. The single check opposite "G. I. Series" indicates preliminary scout films done (fluoroscopic examinations themselves are not checked on this book). The Cholecystograms ore single-checked for the a.c. film; "F.M." means "to have fatty meal and return"; "o" signifies that the F.M. was ordered from the Diet Department. (Cholecystograms might, instead, be marked "finished" or "repeat dye" as the case might require.) The small figure indicates the Kv.P. used, so that the technician doing the follow-up at noon will be able to duplicate it. The Colon exam-

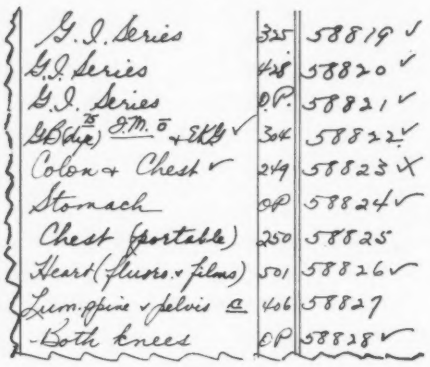
G. I. Series 325 58819
G.I. Series 428 58820
G. I. Series OP 58821
G.B. (dye) 25 F.M. o + EKG 304 58822
Colon + Chest 249 58823
Stomach OP 58824
Chest (portable) 250 58825
Heart (fluoro. + films) 501 58826
Lum. spine + pelvis 406 58827
Both knees OP 58828

Fig. II. "10 a.m."

ination is "double-checked" because the post-evacuation film has been made, completing the examination. We see at a glance that No. 58825 and No. 58827 are not attended to yet, although No. 58827 has been called for, as indicated by the small "c". When two separate services are required for the same patient, they are listed together but checked off separately, as "G.B. and EKG", "colon and chest."

3 p.m.: The gall-bladder and gastric cases have come back and the p.c. and 6-hour films, respectively, have been made, as indicated by the doublechecks. One "G.I. Series" has been changed to "upper only". The others are to return, and noted in the appointment book for next day at "B.E." The next morning, the "B.E.'s" are copied into the technicians' book, with their numbers as of the previous day. New requisitions are entered, and we proceed as above.

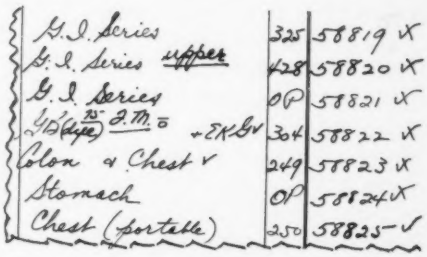
G. I. Series 325 58819
G. I. Series upper 428 58820
G. I. Series OP 58821
G.B. (dye) 25 F.M. o + EKG 304 58822
Colon + Chest 249 58823
Stomach OP 58824
Chest (portable) 250 58825

Fig. III. "3 p.m."

This simple piece of "scientific management" saves us much time and motion every day; in fact it would be interesting to know just how many miles of needless walking it has saved individual technicians since the system was started.

NOTES

(1) The diagnostic facilities are arranged in four rooms: main radiographic (with darkroom adjoining); Fluoroscopic-radiographic; a small room with Bucky table and mobile unit; a cystoscopy room which is also used for electrocardiography.

(2) Fluoroscopy records are large blank forms with bold-printed headings and sub-headings, on which the radiologist makes notes during the course of fluoroscopic examination.

(3) All patients have a "flat" film of the abdomen before a barium series, in order to demonstrate any possible pathology that might be later obscured by the contrast meal. Fairly frequently this film shows some condition requiring further investigation.

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Twenty-Second Annual Convention A.S.X.T.

By JANE MARTIN, R.T. McGregor Clinic, Hamilton

The 22nd Annual Convention of the American Society of X-Ray Technicians was held in Columbus, Ohio, the United States' third largest convention city, and state capital of Ohio. Columbus has many beautiful state, federal, and municipal buildings, and provided an interesting setting for a very successful Convention.

The general programme started Sunday, May 28th, with a "Get-Acquainted" breakfast, luncheon, and morning and afternoon business discussions in preparation for formal adoption of new articles of incorporation and by-laws. Monday morning the Refresher Courses started in two groups, the first 7.45 to 9.00, the second 9.10 to 10.15, and at the final count over four hundred had registered for the various courses. The total registration for the entire Convention was about five hundred. It was easy to see that American technicians are anxious to improve their work and keep up-to-date on new techniques. Your reporter was privileged to attend the excellent lectures in "Advanced X-Ray Physics," given by Dr. L. G. Idstrom of Swedish Hospital, Minneapolis, Minnesota. With a specially built panel on which was mounted a "live" model x-ray machine circuit, Dr. Idstrom clearly demnstrated current flow in a simple circuit. This gave us a basic knowledge which was essential, as he later described the circuits of more complicated and powerful x-ray machines and of betatrons and cyclotrons.

Also heard were lectures in "Radiography of the Head," by Russell Rabold, R.T., of Miami Valley Hospital, Dayton, Ohio, who had several new techniques to offer.

Other Refresher Course lecturers were Drs. G. L. Sackett and G. Graves, "Radiographic Anatomy"; Mildred McIntyre, R.T., "The Art of Counselling"; John Cahoon, Jr., R.T., "Formulating X-Ray Exposure Charts and Special Techniques"; David Shields, R.T., "Medical Photography"; Edward White, R.T., "Specialties in Radiography"; Myrtle Devine, R.T., "Parliamentary Procedure".

Business sessions were held each morning from 10.30 to 11.45 and were very efficiently conducted. President Erminda Clarke, R.T., a most capable lady, had the proper remark for every situation and has obviously been a source of inspiration to her conscientious Executive. Progress was shown by the number of approved schools of training (now 267); the increase in the number of schools giving longer training; the aim for two-year training for all technicians; the work toward a standardized curriculum; the appeal for improvement of inspection of schools; new committees on x-ray protection and on military commissions for x-ray technicians; investigation of salaries of technicians according to their standing; and the aim of improving the professional standing of technicians.

Mr. John Cahoon, Chairman of the Committee on Education and Registration, gave an excellent report of his Committee's work in approaching the American Medical Association for greater recognition of registered technicians, especially as teachers and senior technicians. He reported that the Department of Labour is working with the American Hospital Association to classify technicians according to their various duties, and that the American Society of X-Ray Technicians is gaining prestige for its work in improving the standards of x-ray technical work. Dr. Idstrom spoke following Mr. Cahoon, and recommended that a uniform textbook should be compiled to be distributed by the Society.

Reports on membership by Secretary--Treasurer George Stulle, R.T., were very impressive. The total A.S.X.T. membership is a staggering 30,280.

A change in the Constitution of the A.S.X.T. was voted upon in a very business-like manner, indicative of the careful organization of the Executive and the seriousness with which the members regard the Society's affairs.

Spirited campaigning was carried on for all issues, from choice of new Executive members to choice of the 1950 Convention city. The new Executive was announced as follows: President, John B. Cahoon, Jr., R.T.; First Vice-President, Myrtle Devine, R.T.; Second Vice-President, Nanaline Hawes, R.T.; Third Vice-President, Sister M. Gaudenter, R.T.; Secretary-Treasurer, Alex. Turner, R.T. Next year's Convention is to be held in Philadelphia.

The afternoons were devoted to technical papers and addresses. Three papers were the winners of N.E.M.A. awards. First prize went to "Colon Radiography: Special Emphasis on Double Contract Studies," by E. F. Fougelle,

R.T., Scott and White Clinic, Temple, Texas. This paper told the history of double contrast colon radiography and described the specialized technique used at Scott and White Clinic, including preparation, type of barium, positioning, and technical factors. Mr. Fougelle's excellent films proved the value of this technique.

Second N.E.M.A. award winner was a paper by Robert Stanfield, R.T., Norfolk, Virginia, whose subject was the "Lateral Decubitus Position and its Applications." Mr. Stanfield described the wide range of areas in which additional diagnostic information may be obtained by films in the decubitus position. They include gall bladder, chest, kidney, colon and abdomen, and radiographs of these regions were shown bearing out the value of the position.

Third winner was Sidney Alexander, R.T., of New York City, who described "A New Angle Device Simplifying Technique." This simply made gadget is an invaluable aid where the central ray must be directed at a certain angulation which may or may not be parallel to the table top.

Mr. H. O. Mahoney, Chicago, Ill., gave an interesting paper, "Canthomeatal Line and Its Use in Radiography of the Paranasal Sinuses." His gigantic and sharply coloured drawings of the anatomy involved and the various facial contours with which we must deal illustrated his lectures to best advantage.

An outstanding address was the Jerman Memorial Lecture given this year by Arthur Fuchs, R.T., of Rochester, N.Y. His subject, "The Rationale of Radiographic Exposure," dealt with all the complex factors influencing x-ray exposures, as well as their relation to each other.

Dr. Edward Chamberlain, renowned radiologist of Temple University Hospital, Philadelphia, gave an inspiring address encouraging all technicians to use their potential ability to improve the quality of their work and thus avoid mediocrity.

Dr. Robert Arens, a member of the Advisory Committee appointed by the Board of Chancellors of the American College of Radiology, spoke on the quality of the future x-ray technician and clearly indicated that educational requirements and standards of training would be much higher in the future.

Mr. William Stronach, Executive Secretary of the American College of Radiology, spoke on the growth and importance of the American College of Radiology and its association with the A.S.X.T.

Each day was highlighted by a delicious luncheon, sponsored by different state societies who provided souvenir favours emblematic of their state. Monday's luncheon, sponsored by the North Caroline Society, honoured the Sister technicians, and the guest speaker, Mr. H. O. Mahoney, gave a very interesting talk on these gracious ladies of our profession. Tuesday the Indiana Society honoured the Board of the American Registry of X-Ray Technicians, honorary members and visiting radiologists. Guest speaker Richard F. Mills of Indianapolis, Indiana, completely convulsed his audience with a straight-faced discourse on "Apple Pie," Etcetetera, as he would say. At Wednesday's luncheon, sponsored by Nebraska and honouring state presidents, the speaker was Dr. Maurice Frazer of Lincoln, Nebraska,

Monday evening a display of "Gadgeteria" was presented, and many devices designed to make some aspects of our work simpler were shown. The Exhibit hall was a centre of interest at all times with many excellent sets of films from several states.

Tuesday evening the Ohio Society entertained with "A Night at the Bowery," and many Ohio members were fetchingly dressed to represent various Bowery characters. Along with two delightful singers, a play entitled "Love Rides the Rails' was presented, courtesy of General Electric X-Ray Corp.

Wednesday night a delicious buffet supper was served, courtesy of Picker X-Ray Corp.

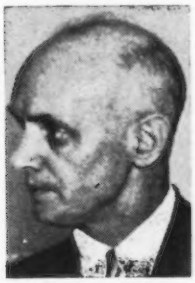
Thursday evening the Ohio and Central Ohio Radiological Societies sponsored a cocktail party in the beautiful Sapphire Room. The annual banquet followed with Erminda Clarke presiding (and still as capable and witty as at the beginning of the week), Dr. D. Bowers of Columbus, jovial toastmaster, and guest speaker Erwin Johnson.

Towards the end of the banquet a group of Hawaiian musicians appeared to bestow leis on those at the head table, and sing and dance to flowing Hawaiian melodies. Afterwards the tables were cleared away for dancing, an enjoyable climax to a delightful evening.

Friday morning the new officers were inducted and new committees appointed before adjouring for the final luncheon, which closed a highly successful Convention.

Who's Who in the C.S.R.T.

Conducted by the Editor



JOHN COLLINS
Ontario Delegate

A member of the Ontario Society for the past thirteen years, and now starting his second period as President, Mr. John Collins has given faithful service to the society over a long period. He became interested in x-ray work towards the end of the first war. On being released from service he took up Engineering and worked as a machinist for some years. In 1932 he entered the Medical Department of McKinnon Industries, St. Catharines, and set up an x-ray department in 1936 where he has been working ever since. He organized a Division of the St. John Ambulance for the employees, and since 1940 has held the rank of Divisional Superintendent of the McKinnon Industries Ambulance Division. Jack likes to travel and to "play golf with people like himself who can't play." His ambition is to see a bigger and better O.S.R. in the near future.

LESLIE J. CARTWRIGHT
Editor, The Focal Spot

L. J. Cartwright, Editor of The Focal Spot, served in the Canadian Army Medical Corps from 1916 to 1919 as radiographer with rank of Staff-Sergeant. On discharge from the army in 1919 obtained position as radiographer at The Hospital for Sick Children, Toronto. The staff at that time consisted of radiologist, technician and clerk. In 1950 about twenty people are employed. Granted a Fellowship in the Ontario Society of Radiographers 1935. Member O.S.R. Executive 1938-1940. Sectional Chairman 1939, 1940, 1941. President Ontario Society 1941-42. Member Examining Board 1942-43. Member Educational Committee 1942-43. Co-Editor "Ontario Radiographer" 1942-43. Editor "The Focal Spot" since inception in 1944. Instructor in Radiography of Children, University of Toronto Extension Course 1949-50.

STAN KATHRENS
Alberta Delegate

President Alberta Division C.S.R.T., Mr. Kathrens had five years' war service with the Canadian Navy, being Sick Bay Petty Officer (X-Ray). He started x-ray work in 1939 and was President of the Calgary Section of the Alberta Division in 1948. Mr. Kathrens is now Chief Technician in the X-Ray Department of the Calgary General Hospital. In this snap taken at Lake Louise, Stan is the one behind the blinkers.

MISS PAT ROGERS
Chairman, Convention Committee

The energetic young lady pictured here is one of the best known and most congenial of the B.C. members. She was born in Vancouver and attended schools in that city. She took her x-ray training at the Vancouver General Hospital and on completion of her training got her American R.T. She was the first Student Member of the B.C. Society and subsequently took her Canadian R.T. She was employed at the Vancouver General Hospital for over six years, and left to work with Dr. J. A. Ireland about two years ago. Pat is an enthusiasic worker and very well liked by all who know her. Her hobby for the past few months has been motoring and she loves to drive her Hillman whenever she possibly can. She has been a very diligent worker for the C.S.R.T. Convention and her efforts to make a good showing for Vancouver have been of great value and assistance.

WILLIAM DOERN
Manitoba Delegate

Manitoba is being represented again by the man who has worked so hard for many years both for his provincial society and the C.S.R.T., particularly on the Resolutions Committee and the Committee on Laws. Mr. Doern is at present C.S.R.T. Director representing Manitoba. Bill's biography may be found in April '48 Focal Spot.

JAMES P. CONNELL
Saskatchewan Delegate

Mr. James P. Connell, born in South Shields, England, 1909. Came to Canada in 1918 to Fort Qu'Appelle, Saskatchewan. Mr. Connell joined the staff of the Saskatchewan Anti-Tuberculosis League in 1925 at Fort Qu'Appelle, and was transferred to Prince Albert Sanatorium in charge of the X-Ray department when that institution opened. In April, 1947, after 22 years' service with the League, he resigned to join the staff of the Medical Arts Clinic in Regina as technician in charge of their X-Ray Department. Mr. Connell is a member of the American Society and has always taken an active part in the Saskatchewan Society. He was one of the charter members and has served as secretary-treasurer and president. Mr. Connell was President of the Local Regina Branch in 1949. He will be looking forward to seeing many old friends at the C.S.R.T. Convention in Vancouver in September.

(continued on next page)

The Focal Spot

Journal of the Canadian Society of Radiological Technicians

LESLIE J. CARTWRIGHT, EDITOR

Editorial Notes

DUE to space limitations in this issue, despite the addition of eight pages, these notes will have to be quite brief. Preparations for the Vancouver Convention are proceeding vigorously. Among the many outstanding speakers will be Dr. S. T. Cantril of Seattle, one of the most prominent physicists in the U.S.A., who was present at Bikini and many other atomic experiments. Another able and delightful speaker will be Mr. E. Dale Trout of the General Electric X-Ray Corporation. He will speak on "The Patient Dose in Radiography." Dr. H. F. Batho, Physicist of the B.C. Cancer Institute, will discuss "Radiation Hazards and Means of Protection." A lecture by Dr. Batho lives long in the memories of his listeners. Mr. George Jackson, Educational Division of the Picker X-Ray Corporation, will speak on "Some of the Electrical and Mechanical Aspects of Past, Present and Future X-Ray Equipment." George is a very able teacher and one of the outstanding members of the C.S.R.T. A subject which should prove to be very helpful is that of Mr. W. B. Cox of the Eastman Kodak Company, Seattle, Wash., "The Control of Secondary Radiation Fog." Dr. W. P. Fister, Neurologist, will discuss "X-Rays in Psychiatric Medicine." Miss Donalda Campbell, Director for Quebec, will give a paper, the subject not yet announced. "A Brief Outline of the Essentials of Child Radiography" will be given by L. J. Cartwright, followed by a talk entitled "What's New?" On the lighter side a most interesting feature should be the talk by Mr. T. L. Tait, a member of the B.C. Mountaineers' Association. This will be illustrated by many beautiful color slides which will bring scenes to the screen not often seen by the general public.

The registration desk will open at 9 a.m. Wednesday, September 6th, and scenic drives and other relaxations will be arranged, so it would be a good idea for members to plan to get to Vancouver one day ahead of the actual start of the convention. Many other social entertainments are planned, including a boat trip, and Vancouver extends to all members the warmest possible invitation to come and see the Golden West in the company of the nicest people it is possible to meet.

We would like to extend our congratulations to our own Dr. E. A. Petrie upon the occasion of his election as President of the C.A.R. Dr. Petrie continues as representative of the C.A.R. on the C.S.R.T. Board of Directors.

We note that a fourth provincial society, Nova Scotia, has stepped into line with Alberta, Manitoba and British Columbia and has become the Nova Scotia Division C.S.R.T.

(*continued from page 135*)

WHO'S WHO IN THE C.S.R.T.

ALBERT R. CHEFFINS
Quebec Delegate

The biography of Mr. Albert Cheffins appeared in April '48 Focal Spot. Mr. Cheffins is now President of the Quebec Society. We feel sure he is particularly looking forward to visiting Vancouver as his son is entering Law School at the University of British Columbia this Fall.

WILLIAM H. BEATTEAY
New Brunswick Delegate

William H. Beatteay, President of the New Brunswick Society of X-Ray Technicians, is a native of Saint John, N.B., where he received his preliminary and high school education. He was employed at a Saint John photographic studio until the outbreak of war in 1939 when he joined the armed forces and went overseas. In 1945 he received his discharge from the army and returned to his former employment. In 1946 Bill was taken on the clerical staff of the D.V.A. Hospital in Saint John. In 1947 he was taken on the staff of the X-Ray Department, Lancaster D.V.A. Hopital, as a darkroom technician. Under the supervision of Dr. W. A. Farrell, radiologist at the hospital, and of Drs. E. A. Petrie and A. S. Kirkland, consulting radiologists, Mr. Beatteay received his training as an x-ray technician. In November, 1949, he became registered with the C.S.R.T. and is still a member of the x-ray staff at the Lancaster D.V.A. Hospital.

NOVA SCOTIA DELEGATE

We regret that at the time of going to press Nova Scotia was unable to inform us of the name of their delegate.

Resolutions to be Presented at the Eighth Annual Meeting, C.S.R.T.

The Resolutions accepted for presentation are as follows:

Resolution No. 1—Submitted by the British Columbia Society for discussion at the 1949 Convention, referred to the Member-Societies for further consideration, the majority having expressed their desire to have the Resolution slightly revised, which is now submitted to read as follows:

WHEREAS certain members of the C.S.R.T. residing and employed in one province, are continuing to submit their Annual Dues to a Member-Society in which they formerly resided, and WHEREAS such action is the cause of certain dissension within some of the Member-Societies, and might tend to weaken the unity of the C.S.R.T.;

THEREFORE BE IT RESOLVED that after January 1st, 1951, a member of the C.S.R.T. to remain in good standing in any Member-Society of the C.S.R.T. shall submit his Annual Membership Dues to the Member-Society in the Province where he is employed as a Radiological Technician.

Resolution No. 2—Submitted by the Saskatchewan Member-Society:

WHEREAS the current regulation covering admission to examination for membership in the C.S.R.T. may be shown to have discriminatory effect against students who have already been accepted for training by certain hospitals and related institutions, under the previously existing four year plan; the said students having enroled during the year 1949 and part of 1950;

THEREFORE BE IT RESOLVED that special consideration be given by the Board of Directors of the C.S.R.T. to such candidates, not later than December, 1950, as to a recommended solution to the problem involved.

Resolution No. 3—Submitted by Mr. Wm. Doern, C.S.R.T., with the support of the Canadian Society of Radiological Technicians, Manitoba Division:

WHEREAS there are many R.T.'s employed in Canada who are not ordinary members of the C.S.R.T., but who could qualify for such membership by writing the C.S.R.T. examinations; and WHEREAS such R.T.'s now enjoy the protection given by C.S.R.T. membership by joining their local Society as an Associate Member, and WHEREAS the majority of these technicians have taken advantage of training facilities in Canada which are largely fostered by the Canadian Society of Radiological Technicians, and WHEREAS these technicians have not given any support to the C.S.R.T. Registry, and WHEREAS it will be to the advantage of all concerned if they be persuaded to write the C.S.R.T. examinations;

THEREFORE BE IT RESOLVED that all technicians who enjoy the privilege of ordinary membership in the C.S.R.T. be hereafter referred to as "C.S.R.T.'s" in place of "R.T.'s".

Resolution No. 4—Submitted by the Board of Directors of The Focal Spot:

WHEREAS costs of production of The Focal Spot have shown a steady increase in recent years and the Editor is particularly anxious not to curtail its size or to further limit the number of illustrations, and WHEREAS the revenue from advertising seems to have reached a stable point unlikely to be noteably increased;

THEREFORE BE IT RESOLVED that the subscription rates for Ordinary Members be raised from one dollar and fifty cents to two dollars per annum, commencing January 1st, 1951.

MANITOBA DIVISION C.S.R.T.

Our hearts were saddened during these past few weeks with the news of the passing of two of our well-known Manitoba Radiologists. Dr. James Currie McMillan died at Vancouver May 20th. Dr. Omer G. Hague died in Barrie on June 10th on his way home from Toronto. We extend our deepest sympathy to the members of their families.

DR. JAMES CURRIE McMILLAN

Dr. James Currie McMillan died on May 20th at Vancouver after a prolonged illness.

Succeeding Dr. W. L. Watt as radiologist to the Winnipeg General Hospital when Dr. Watt went overseas early in the First World War, Dr. McMillan served in that position for thirty years. He may justly be termed a pioneer in modern radiology.

Born in Minto, Man., he attended Brandon College and the University of Manitoba, from which he graduated in Medicine in 1907. He then worked under Dr. Watt and in 1918 went overseas as Adjutant of the 11th Canadian Field Ambulance. On his return he studied radiology in New York under Dr. Lewis Gregor Cole, then became director of the Department of Radiology at the Winnipeg General Hospital. His list of memberships in medical bodies is long: Fellow of the American College of Physicians (Canada), American College of Radiology, a charter member of the Canadian Association of Radiologists, a life member of the Winnipeg Medical Society, and a past president of the Manitoba Medical Association.

Through his ability as a diagnostician and teacher and his gift for making friends, he made a deep impress on medical circles in the Canadian West.

DR. OMER G. HAGUE

Dr. Omer G. Hague of Winnipeg died in the Royal Victoria Hospital, Barrie, Ontario, on June 10th, following a short illness. Dr. Hague, a victim of the Manitoba flood, had evacuated to Toronto and was on his way home when he collapsed aboard the train and was taken to the hospital at Barrie.

Born in Toronto in 1895, Dr. Hague graduated from the University of Toronto in 1920. He was a member of the resident staff of St. Michael's Hospital, 1921-22. In 1925 he was one of the two doctors to receive the first diplomas ever issued by the Department of Radiology of the Faculty of Medicine of Toronto University, following two years' work in the Department of Physics under Prof. McClennan, and in the Toronto General Hospital radiological department under Dr. G. E. Richards. He was noted for his silicosis work at the Hollinger Mines in Timmins from 1926 to 1928. In 1929 he received the appointment as chief radiologist at St. Boniface Hospital in Manitoba and in 1931 went into private practice in Winnipeg.

Dr. Hague was a member of the Royal College of Physicians and Surgeons in diagnostic and therapeutic radiology, and was elected to the Royal College of Physicians of Canada in 1931. He was also a member of the Manitoba Medical Association and the Winnipeg Medical Society.

Many things have happened in Manitoba since our last report to you. First, let's go away back to April and a report on our meeting held at St. Boniface Hospital on the twelfth.

Dr. F. G. Stuart presented a very instructive paper, "The Optic Foramina." Dr. Stuart reviewed the anatomy relative to these openings, and explained head and tube angulations. The use of projected films and drawings, and a skull helped clarify many points.

Miss Therese Chabot gave a paper, "An Improved Method of Radiography of the Coccyx." This method makes use of an inflated Bardyx in the rectum, and should be of assistance when difficulty is encountered in radiography of this region. Miss Denise Turenne presented "The Value of a Chest Technique Based on Patient Thickness." She emphasized that all chest

plates should be of a similar density, and this is not easily obtained when a guessing technique is used. Desmond Butler explained "The Effect of Filament Evaporation on Tube Current." A simple review and results of an experiment were given to show that filament evaporation increases milliamperage, and necessitates frequent base line checks.

The above papers were instructive to all and it is encouraging to see the "younger members" of the Society taking such an active part in the monthly programs.

At this meeting Mr. Wm. Doern, our Provincial Director, was also named as our delegate to the Convention to be held in Vancouver in September. "Bill" is an old hand at Provincial and Dominion business and we couldn't have found a better representative.

All thoughts of a regular monthly meeting in May were abandoned as we took up our weapons: sandbags, shovels, rubber boots, etc., to fight the Battle of the Flood. Many of the x-ray departments located in the basements of various institutions had to be stripped and equipment moved to higher levels. The x-ray servicemen were in great demand.

A number of the hospitals had to be evacuated with patients being transported to our eastern and western neighbours. St. Boniface Sanitarium, situated far out in the suburb of St. Vital, became a fort surrounded by the muddy flood waters but standing firm behind its wonderful dyke. Many of the staff elected to stay out the flood and supplies were delivered to them daily by the indomintable Navy.

Shown above is a picture by Geo. Young of The Vancouver Sun, of Sister Blais, head of the X-Ray Department of the San, patrolling the dyke and looking out over the expanse of water which stretched for miles.

By now the flood is already an old story to all except those who suffered from it. To them the return to what used to be homes is disheartening. Ruined floors, mildewed walls, sodden, collapsed furniture, slime underfoot, stench in the nostrils and destruction all around. Many of our technicians have been met with just such a scene. The Manitoba Flood Relief Fund was established to help these people and it is "hats off" to the Ontario Society for their very generous donation of $50.00 which was sent to our

Society and turned over to flood relief. We, in turn, to keep step with our helpful neighbours, also donated $50.00 toward the cause. Thanks again, Ontario!

With the flood behind us, we at last got around to holding our postponed raffle in aid of our delegate's expenses. Mrs. Margaret Robson was the lucky ticket holder and our sincere congratulations to her.

On June 27th we wound up our activities with a very successful weiner roast at the summer home of Mr. and Mrs. D. Bain at East St. Paul. In spite of inclement weather some forty technicians and friends gathered for the outing and we had a swell time around the bonfire and later indoors where dancing and a rousing sing-song were made very enjoyable by Dr. Baighton and his piano accordion. Many thanks to the Doctor and to Mr. and Mrs. Bain for a grand evening.

And now it is on to holidays and a rest! See you in Vancouver in September!

—CATHERINE COULSON, R.T.
Sub-Editor.

NEW BRUNSWICK SOCIETY OF X-RAY TECHNICIANS

MARITIME CONVENTION

The Tenth Annual Meeting and Maritime Convention of the New Brunswick Society of X-Ray Technicians and the Nova Scotia Society of Radiographers was held at the Admiral Beatty Hotel, Saint John, N.B., on May 25th and 26th, 1950.

The meeting was called to order at 9 a.m., with Mr. William Beatteay as Chairman. Delegates to the convention were formally welcomed by Mayor E. Patterson of Saint John. Following the address of welcome to the Loyalist city, Dr. H. R. Ripley extended to those present the greetings from the radiologists. From our sister-province, Nova Scotia, Sister Edmund Campion brought the greetings and good wishes from that province. Response was made by Mr. W. Beatteay. At 9.30 a.m. Mr. Darrell gave the Presidential Address. The first paper on the program was given by Miss Barbara McLean. Barbara's subject, "Ethics," was cleverly interspersed with color and humor, which made it enjoyable and instructive. At 10 a.m. Dr. Stephen Weyman spoke on "New Methods of X-Ray Diagnosis of Congenital Heart Disease." This talk, illustrated by films and lantern slides, including angiocardiography, was very instructive. At 11 a.m. appointment of the Resolutions Committee brought the morning session to a close. The Annual Luncheon was held at 12.30 with Dr. Kerr Higgins as Guest Speaker. Dr. Higgins, opening his address with the quotation, "Daughter, am I in my mother's house; mistress in my own," spoke on Canada's history as a daughter in the Britsh Commonwealth and as mistress in her own Dominion homeland.

The afternoon session was presided over by Sister deLellis and opened with a lecture by Dr. W. A. Farrell, Fredericton, on "The Realm of X-Ray Therapy." As on previous occasions Dr. Farrell's ready sense of humor lent pleasant listening to an otherwise serious subject. At 3.30 p.m. Miss Virginia Stevens presented in a clear and concise manner a paper entitled "A Simplified Technique for Roentgenography of Smith-Petersen Hip Nailing," and demonstrated the use of a device designed by Dr. E. A. Petrie to hold the film in position for accurate duplication of the lateral projection of the neck of the femur.

"Principles of Electricity," a motion picture, was shown through the courtesy of the General Electric X-Ray Corporation by their New Brunswick representative, Mr. W. R. Wilce. The afternoon session was brought to a close by a lecture, illustrated by slides, on "Diagnosing Film Complaints", by Mr. George A. Jackson, Educational Director of the Picker X-Ray Corporation.

At 7 p.m. the Business Meeting of the New Brunswick Society of X-Ray Technicans was held, when the following officers were elected:

President—Mr. William Beatteay.
Vice-President—Sister MacKenzie.
Treasurer—Mr. Paul Nadeau.
Other Members of Executive—Dr. H. R. Ripley, Sister M. deLellis, Miss Romano Green, Mr. Darrell Liston.

On Friday, May 26th, the morning session opened at 9.30 a.m., with Mr. Darrell Liston as Chairman. In a well-delivered instructive paper

on "Identification of Films", Miss Esther Michaelsen stressed the importance of properly marking all roentgenograms. The next paper was presented by Miss Helen McKinnon. In "All by Myself in the Control Booth," Miss McKinnon spoke of the satisfaction of work well done in the service for others as adequate compensation for the responsibilty any good technician must accept.

At 10.15 a.m. Miss Evelyn Malm gave a talk on "Radium," going back through the history of its discovery by Madame Curie and bringing up-to-date the fascinating story of its use in present day therapy. "Spot-Film Roentgenography of the G-I Tract," illustrated by lantern slides, was presented by Dr. E. A. Petrie. Our thanks to Dr. Petrie for a new appreciation of the Spot-Film in gastro-intestinal work. Mr. Paul Nadeau acted as Chairman for the afternoon session. The highlight of this session was a symposium on the History of Roentgenology conducted by Dr. E. A. Petrie, using a pioneer x-ray machine with a gas tube. This machine, one of the earliest pieces of x-ray equipment in the province, was loaned to St. Joseph's Hospital through the courtesy of Dr. E. T. Kennedy, Sussex. The student technicians at St. Joseph's Hospital took part in the symposium and each presented a paper on a subject relating to the history of x-ray. "Radium and the Curies" was given by Miss Carmella Gautreau; "Wilhelm Conrad Roentgen" by Miss Agnes Foley; "Scientific Forefathers of X-Rays" by Miss Patricia Crowley; and "Improvements in X-Ray Equipment and Technique" by Miss Althene McConnell. We are greatly indebted to Mr. George Jackson for his able portrayal of Roentgen. Miss Gautrear, Miss Foley and Miss Crowley, dressed in costume of the era, represented by their respective papers, and Mr. Jackson as the bearded Roentgen, brought smiles and applause from a most appreciative audience. Miss McConnell looked very attractive in the uniform of the x-ray technician of the present day in keeping with her paper on modern techniques.

At 3 p.m. Dr. G. Gaulton gave a talk on "Roentgenography of the Sinuses." This lecture, presented in an easy and concise manner, was greatly appreciated. A paper, "Satisfying the Surgeon", was given by Dr. G. W. A. Keddy. This talk presented many factors to which the technician must give careful attention in bone radiography. Doubts we have none that Dr. L. R. Morse finds the subject of Urography an all-important and fascinating one. At the conclusion of such an enthusiastic lecture given at this convention surely none present could underestimate the value of urography as an aid in diagnosis. The Tenth Annual Meeting was brought to a close with a banquet at the Admiral Beatty Hotel. Dr. A. S. Kirkland was the Chairman and Toastmaster. Dr. G. L. Kane, Professor of English at St. Francis Xavier University, Antigonish, was the Guest Speaker. Father Kane's theme was "Twenty Century Man" and dealt with progress in the field of science.

Special guests from Nova Scotia Society of Radiographers were Sister Edmund Campion and Sister Agnes Leo, both of Halifax; Miss Dorothy Winter, Yarmouth; Miss Ethel Ingraham, Wolfville; P/O Reg. Potts, H.M.C.S. Cornwallis; and G. G. Harris, Kentville.

Following the dinner, Uncle Bill's Junior Radio Stars provided a thoroughly enjoyable program of entertainment.

That we shall remember with pleasure the Tenth Annual Meeting and Maritime Convention of the N.B. Society of X-Ray Technicians and Nova Scotia Society of Radiographers is due in a great measure to the efforts and generosity of the members of the Program Committee.

Not least among those who helped to make the Convention a success were the service men and representatives of the various x-ray and film companies. You know the old adage—"A friend in need"; that is true—they are!

We wish to acknowledge also the generosity and co-operation of the following x-ray manufactuerers and film companies:

General Electric X-Ray Corp.
Picker X-Ray of Canada.
X-Ray and Radium Industries Ltd.
Ansco of Canada Ltd.
The Ferranti Electric Ltd. (X-Ray Division).

—MARY HOWES, R.T.,
Sub-Editor.

ST. JOSEPH'S HOSPITAL SCHOOL FOR X-RAY TECHNICIANS, ST. JOHN, N.B.
Back row, l. to r.) Gertrude O'Sullivan*, Virginia Stevens*, Carmella Gautreau, B.A.*. Front row, l. to r.) Athlene McConnell, Thelma Ames, R.T.**, Agnes Foley, Joyce Flood, Margaret Fitzgerald (not present in photo). *Graduates of 1950 class. **Assistant Instructor.

The above photograph of student x-ray technicians was taken during their course in elementary clinical photography. This year, for the first time, the technicians completing their training under the direction of Dr. E. A. Petrie will have a public graduation in conjunction with the School of Nursing at the same institution.

The curriculum in x-ray technique followed at St. Joseph's Hospital is as follows:

FIRST YEAR

FIRST SEMESTER*	Hours
Anatomy and Physiology	50
Nursing Essentials	16
History and Roentgenology	6
Professional Ethics	8
Medical Terminology	8
Departmental Records and Office Administration	8
Processing Room Technique	16
Physics of Electricity and Radiation	16
Essential Factors in Roentgenology	8
Accessory X-Ray Equipment	8
Course A in Roentgenographic Technigue	16

SECOND SEMESTER*	Hours
Anatomy and Physiology	60
Radiologic Physics	16
X-Ray Apparatus	8
Care and Preparation of Patient	4
X-Ray Protection and Fluoroscopy	8
Dental Roentgenography	8
Course B in Roentgenography Technique	16
First Aid	12

* Each semester is sixteen weeks.

SECOND YEAR

FIRST SEMESTER	Hours
Course C in Roentgenographic Technique	16
Roentgen Therapy Technique	16
Course D in Roentgenographic Technique	16
Roentgenogram Critique	16*
Introduction to Radium Therapy	8
Introduction to Medical Science	16
SECOND SEMESTER	**Hours**
Departmental Supervision	4
Practical Supervision	2 months
Character Formation	16
Journal Club	16
General Review	16
Elementary Clinical Photography: optional	

In addition to class instruction each student is on duty at least 30 hours per week in the x-ray department to gain proficiency in x-ray technique.

* In addition to lectures a daily analysis of routine films is given.

In addition to the technical courses the students are required to prepare written articles during training in an attempt to stimulate initiative and observation. It also teaches the student how to take an active part in meetings and the publication of articles pertaining to x-ray technique.

The course of studies followed at the present time is felt to be satisfactory, although it is still tentative and subject to revision on recommendation of the Committee on Technical Training of the Canadian Association of Radiologists.

ONTARIO SOCIETY OF RADIOGRAPHERS

15th ANNUAL CONVENTION

The Fifteenth Annual Convention of the Ontario Society of Radiographers, held at the Royal York Hotel, Toronto, on June 9th and 10th, was probably the most successful since its inception of this lengthening parade of O.S.R. highlights.

The official registration was about 120 and one did not need to be a hawk-eye to realize that there were many additonal members present who apparently did not consider it necessary to pass through the formality (or expense!) of registering.

The Annual Dinner which concluded the proceedings on Saturday evening hit an all-time high for attendance, every available seat at the tables being taken and a few of the late arrivals were unable to obtain places.

One of the headliners on the list of important speakers was John Cahoon, Jr., R.T., X-Ray Instructor at Duke University, Durham, N.C., and Chief Technician at the University Hospital. He gave his Refresher Course on "An Approach to Standardized Techniques and the Formulating of Roentgenographic Exposure Charts" last year at the A.S.X.T. Convention at San Francisco and again at this year's Convention at Columbus, Ohio. At this year's Convention he was elected President of the American Society. At the conclusion of the meetings there he came to Toronto where fifty-five technicians left their beds early to attend the very instructive and stimulating course which started at 8.30 on Friday morning and was continued at the second session at the same time Saturday. All who registered for this special course received a book on the subject under consideration and this little book is probably more packed with vital information and tables than any the writer has seen, though they may be many times the size. It deals, of course, with technique, not positioning. In itself it was worth the fee for the course. It is possible that the Ontario Secretary may have extra copies on hand which could be purchased by those who were unable to attend the Refresher Course.

The first item on the regular session, under the Chairmanship of Mrs. Mary F. Cameron, F.O.S.R., following the Refresher Course on Friday morning, was "A Demonstration of a Simple X-Ray Unit" by George Jackson R.T., Educational Department of Picker X-Ray Corporation. George, who some years ago was President of the Saskatchewan Society of X-Ray Technicans, has during the past winter been conducting a successful course for student technicans in Montreal. The fundamentals of an x-ray circuit—Transformer, tube, timer, etc., were assembled into a unit and operated, providing a graphic demonstration of the production of x-rays.

Ken Hall, R.T., Ottawa Civic Hospital, spoke with a strong background of personal experience on "Trainng Student Technicans," stressing the necessity not only of a thorough technical knowledge but also of the development of personality and sympathy in dealing with the sick and suffering.

At noon some of the members had the privlege of meeting the distinguished guests socially at a charming luncheon party given by Mrs. Mary Cameron.

At 2 o'clock Friday afternoon the Convention was offically declared open by Controller David A. Balfour, who warmly welcomed the members on behalf of the City of Toronto. The Invocation was then pronounced by Rev. Father H. F. Caley, Padre of Sunnybrook Hospital.

The afternoon session, under the Chairmanship of L. J. Cartwright, F.O.S.R., opened with a big display of radiographs exhibited by Edward F. Gunsen, R.T., Medical Arts Building, Rochester, N.Y. These demonstrated the ubiquity of photo-electric timing for Bucky radiographs. An arrangement of cells beneath the cassette is used in a vertical row along the mid-line for spines; in a rectangle for abdomens and skulls and in other geometrical arrangements for other types of work. The speaker claimed that far from making the technican a mere button-pusher it allows time for more attention to be given to accurate positioning of the patient.

Dr. Desmond T. Burke, D.M.R., Sunnybrook Memorial Hospital, followed with a Report on Education. Dr. Burke outlined the course

given in conjunction with the University of Toronto and five participating hospitals last winter. Sixteen students took this course and practically all are already placed in hospital x-ray departments for their second year's training, after which they will be eligible to write the regular C.S.R.T. exams. Already fifteen applications have been received for the new class starting in the Fall.

Next came the "Brain Trust" Quiz with a panel of three radiologists and a radiographer—Dr. Green, Dr. McNeil, Dr. Zumstoein and Stewart Olheiser, F.O.S.R., with David Sage, R.T., as conductor. The versatility of this quartette of experts was well demonstrated in their replies to the variety of interesting questions asked by members and quite a lot of useful information was gleaned.

In the evening a "Millionaires' Night" provided enjoyable relaxtion. The lecture room was transformed into a midway with professional-looking roulette wheels, dice games, Crown & Anchor, pin balls, etc., and presiding over them were quite professional-sounding spielers, with the voices of the two Georges—Reason and Jackson—easily overtopping the others in the cheerful bedlam of noise. A most attractive buffet supper was welcomed after all the excitement and at the end of the evening an auction sale was held for the prizes, with the bidding up in the hundred-thousands; those who had had the most luck during the evening had the highest bidding power—until they had spent their winnings and then the little man's bids stood a chance.

At 8.30 Saturday morning the large group of enthusiastics were on hand for the second part of Johnny Cahoon's excellent Refresher Course. This session held new and valuable information for more advanced technicians, concerning the development of techniques for skull and spine radiography. Films and lantern slides helped illustrate the methods and results. At the conclusion of this lecture the Chairman, Mr. Weale, spoke of the pleasure experienced by the members of the O.S.R. in meeting and welcoming Mr. Cahoon. He also expressed the appreciation of all present for the privilege of attending these lectures and obtaining the valuable textbook.

The next speaker was Mr. Herbert Ralston, R.T., St. Catharines General Hospital, whose paper was on "Photographic Action and the Latent Image." He presented this vital subject in a new and interesting manner.

The audience was next privileged to hear an interesting paper on "Photography" by Mr. Len Quertermain, R.T., of Sunnybrook Hospital. The excellence of the work of his department has already been shown by the many awards won by Sunnybrook's Department of Photography.

The morning session having been completed, the meeting was adjourned.

At 2 o'clock the afternoon session was opened, again under the Chairmanship of Frank Weale, R.T., with an important event—a movie world premiere with the producers present in the persons of Dr. Desmond Burke and Louis Stanizewski, R.T., of Sunnybrook Memorial Hospital. This film, dealing with the Radiography of the Cervical Vertebrae, with a running commentary by Dr. Burke on the sound track, is in color and is a worthy addition to the series started by the Lumbar Spine film of a few years ago. Some new methods are demonstrated, taking advantage of the natural curvature of the cervical vertebrae. Other radiographers across Canada will doubtless have an opportunity to see it later and should certainly not miss the film when it is shown in their district. A brief recess followed the showing of this film. Mr. Weale next introduced Paul Frederick, R.T., Ontario delegate on the Board of Directors of the Canadian Society of Radiological Technicans. Mr. Frederick presented a very comprehensive report on the inter-relationship between the C.S.R.T. and the O.S.R. Salient points were noted concerning the coordination of policy between the two societies.

A report followed on provincial registration of technicans, given by Mrs. Mary Cameron, F.O.S.R. She set forth some of the advantages to be gained from registration by Act of Parliament through the Provincial Department of Health, the requirements concerning such an act and the manner in which it could be sought. Reference was made to study of the Dental Technicians' Act, approved in 1947, and copies of the Act have been obtained for further analysis. The cost of obtainng an x-ray technicians' Act was noted, and a recommendation made that the Society might well set aside a

percentage of its funds each year towards financing the procurement of such an Act.

Chairman Weale complimented both Mrs. Cameron and Mr. Frederick on the value of their excellent reports.

Following a short recess, the 15th Annual Business Meeting commenced with President John Collins, R.T., as Chairman. (Incidentally, the writer feels that unfavorable comment should be made on the difficulty of getting members back to the lecture room promptly after recess. A short recess is valuable to break the tension and start again refreshed; it should not be used as a signal for dispersion.)

The minutes of the previous meeting were read and approved, and Mr. Collins commented on the business arising from it.

Miss Ada Geldart, R.T., and Miss Lucy Keogh, R.T., were appointed as scrutineers to count the ballots.

The Secretary reported that twelve executive meetings had been held throughout the year to plan the carrying out of several important projects, as well as minor duties. The Society's membership stands at 223 Active members, 84 Student members, and 21 Associate members, making a total of 328 members. The financial report was read and approved.

Mr. Collins then gave his Presidential address, in which he expressed his appreciation of the co-operation and hard work of the executive. He mentioned the talk given by Miss Anne Hayward, R.T., at the spring meeting of the Ontario Hospital Association and its favorable reception. As a result, information about x-ray technicians' working conditions was sent to Dr. Bradley of the Department of Health. Next Mr. Collins reported on a visit paid by Miss Hayward and himself to Mr. Charles Daley, Minister of Labour, to learn about labour laws governing x-ray technicians and solutions to various labour problems. Shortly after this meeting, Miss Hayward and Mr. Robert McCaw, R.T., interviewed the Deputy Minster of Health, Dr. Phair, regarding health hazards and methods of remedying them, resulting in a survey of working conditons carried out personally by the executive to a great extent. Mr. Collins expressed the hope that a fund might be built up for future surveys.

Reporting that five sectional meetings had been held during the year, he pointed out that executive members had attended these meetings to help foster co-operation between sections.

Next Mr. Collins stressed the importance of voting on O.S.R. matters, and the great need for all active members to sign proxy forms for voting on C.S.R.T. matters.

To comply with the regulations of the examining board of the C.S.R.T., Mr. Collins pointed out that it would be advisable to change the By-laws of our Constitution concerning the length of training period for student technicians. He has had the By-laws read by a lawyer who states that they may be altered without involving a point of law.

Mr. Collins concluded by repeating his thanks to his executive members.

Mr. George Reason, F.O.S.R., spoke from the floor, saying that he was amazed at the progress achieved by the executive this year and that he appreciated the tremendous amount of work done.

New business was then dealt with.

A notice of motion was presented by Mr. George Reason, F.O.S.R., to the effect that the present period of three years of training be changed to two years, to comply with the By-laws and Regulations of the C.S.R.T. and that a special general meeting be called to put this change into effect. Seconded by Mr. Paul Frederick, the motion was discussed and then approved.

Mrs. Mary Cameron suggested that the next convention be held in Ottawa with Mr. Ken Hall, R.T., as chairman. Mr. Hall requested that this be deferred to 1952, and Toronto was then chosen as Convention site for 1951.

A notice of motion was presented by Mr. Paul Frederick, seconded by Mrs. Mary Cameron, that a separate invested fund be established to meet expenses towards instituting Provincial Registration in the Province of Ontario. Also, that 20% of the credit balance of the treasury be allotted to this fund each year, or an amount determined at the annual General Meeting. This was approved.

The results of the voting were announced as follows:

President—John Collins (acclamation).
President-elect—David Sage.

Vice-President—Jane Martin.
Secretary-Treasurer—Tony Stechyshyn.
Executive Committee—Robert McCaw and Herbert Ralston.

The meeting adjourned.

Throughout the Convention the Exhibit Hall proved a centre of interest. Films were shown demonstrating the most recent developments in x-ray technique. All exhibits were well mounted and the committee is to be congratulated on the final arrangements. The excellence of the films displayed presented a difficult problem to the judges, Dr. Worth, Dr. Sommers, and Ken Hall, R.T. These gentlemen gave generously of their time and effort in reviewing the exhibits, and finally presented their decision as follows:

First prize to Mary Cameron, R.T., McGregor Clinic, Hamilton, for her comprehensive study of x-ray absorption in various types of tissue—muscle, fat, and bone. This exhibit was commended for its originality, and for its constructive value.

Second prize went to Louis Staniszewski, R.T., Sunnybrook Hospital, Toronto, whose complete and excellently positioned series of radiographs of the cervical spine won high praise.

Third prize also was taken by Mary Cameron, with her splendid exhibit on the elusive temporomandibular joint.

The technicians of Sunnybrook Hospital captured the remaining awards for their outstanding and well presented exhibits.

An unusual gadget exhibited was the special "Technique Chart Box," designed by Mary Cameron and constructed by the Burke Electric & X-Ray Co. of Toronto. The box enables complex charts to be displayed in a neat, compact form.

Prior to the closing banquet the Toronto radiologists were hosts at a delightfully arranged cocktail party. A "toast to our hosts" was aptly proposed by Mr. David Sage, R.T., Convention Chairman, and this was replied to in a genial manner by Dr. A. C. Singleton, representing the radiologists.

The attendance at the banquet proved a record, 175 sitting down to dinner and late arrivals unable to find places. The choice of guest speaker, namely Dr. Andrew McGee, Radiologist of Toronto East General Hospital was a particularly happy one. Dr. McGee reviewed the early days of radiology and radiographic technique in an original and amusing way which completely intrigued his audience.

The members of the O.S.R. were pleased to honor Dr. A. C. Singleton with a certificate of Honorary Fellowship during the programme of the dinner meeting. Dr. Singleton, who has rendered such outstanding service to his profession, to his country and to his fellow man, was presented with his certificate by the President, John Collins. The closing words of Mr. Collins' address were particularly well chosen: "By his sustained interest in this Society and in the welfare of technicians throughout the country, by much work and many kindnesses toward us in his services as adviser and teacher, Dr. Singleton has bestowed much honor upon us. We are proud to bestow this Honorary Fellowship upon him as a mark of sincere gratitude and esteem."

Following the banquet the room was cleared for dancing. This was enjoyed by all, although it was shown that a "Refresher Course" in square-dancing ought to have been given by Bob McCaw beforehand.

A "Paul Jones" helped to mix the crowd, and a "spot-dance" was held with prizes generously donated by C.I.L. Between these events the President, John Collins, was presented with a cigarette case as a token of appreciation for the splendid work he has done throughout the year, guiding executive affairs.

As another convention drew to its close the hard work of the convention committee left a favorable memory with all those who had been privileged to attend. The members of this committee were David Sage, Chairman; Tony Stechyshyn, Secretary; Margaret Bartram, untiring Social Convenor; George Reason; John Collins and Robert McCaw.

The officers and members of the Ontario Society of Radiographers wish to express their appreciation of the co-operation of the following in helping materially towards the success of the convention:

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—JANE MARTIN, R.T.,
Secretary-Treasurer.

Miss Verna Lukey R.T., York Clinic, Coxwell and Danforth, Toronto, who attends to technician placement for the O.S.R., would be glad to hear from technicians needing positions and from employers needing technicians. She would particularly appreciate being notified again by both these groups when the transaction is completed so that she can keep her books straight.

X-Ray and Radium Appointment

MR. HARRY M. MACLEAN

X-Ray and Radium Industries Limited have announced the appointment of Mr. H. M. Maclean to the position of Ontario Sales Manager. Mr. Maclean has been in the x-ray business since 1940, and has had very extensive technical experience and training in general radiography and the specialized fields of chest and neurology. Mr. Maclean has been with X-Ray and Radium since the inception of the Company.

QUEBEC SOCIETY OF X-RAY TECHNICIANS

The following is the nominal roll of successful candidates of the May examination:

Mrs. Phyllis Bowen—Royal Victoria Hospital, Montreal.

Mr. John Brewer—Royal Edward Hospital, St. Urbain, Montreal.

Miss Eldo Pigeon (Piccione)—St. Mary's Hospital, Montreal.

Mrs. Brenda Fraser Schoch—Montreal General Hospital, Central Division, Montreal.

Miss Lena Freeman—Queen Mary Veterans' Hospital, Montreal.

Miss Margaret Mary McAvoy—35 Buell St., Brockville, Ontario.

Miss Genevieve Aymong—23 Jean Talon St. West, Montreal.

Miss Claire Belanger—Radium Institute, 4120 Ontario St. E., Montreal.

Miss Louise Bergeron—Notre Dame Hospital, Sherbrooke St. E., Montreal.

Miss Agathe Drolet—Hopital Ste Croix, Drummondville, Que.

Miss Edith Morrissette—Hopital Ste Croix, Drummondville, Que.

Mr. Jean Marie Roy—Hopital Notre Dame, Sherbrooke St. E., Montreal.

Sister Marie de Bethanie—Hopital de L'enfant Jesus, Quebec City, Que.

In listing the names of firms who contributed to the cocktail party at the Provincial Convention, one firm was inadvertently omitted. Our thanks is extended also to the firm of Boisvert and Jannelle.

—ROSINA McHARDY, R.T.,
Sub-Editor.

LA SOCIETE DES TECHNICIANS EN R.X. DE LA PROVINCE DE QUEBEC

La 9iém Assemblée Annuelle de la Société des Techniciens en Radiologie de la Pronivce de Québec a eu lieu à l'Hotel Windsor à Montréal le 6 Mai 1950. Monsieur le Docteur L. A. Gagnier, Président Honoraire, sortant de charge souhaite la bienvenue à tous les membres.

Mlle Edith Morrissette lut un article qui avait été écrit par Sr. Véronique Boutin, technicien R.X. à l'Hopital Ste Croix, Drummondville, Québec, intitulé "Vivons Notre Devise."

Miss Rosemary O'Hagan, R.T., fit un résumé bien impressionment de l'Histoire de la Société du début à nos jours.

Mr. Donald C. Fisk, R.T., nous intéressa en nous parlant des responsabilités du technicien.

M. Paul Berty, répresentant technique de Eastman Kodak Co., nous fit dérouler de très intéressants films scientifiques.

L'invité à honneur au déjeuner était M. Léon Lortie, qui nous captiva sur un sujet fort émouvant. Les femmes savantes du début au siècle actuel.

Mr. George Jackson, représentant de Picker X Ray Co., nous parla "Diagnosing Film Complaints."

M. le Docteur Guillaume Gill, radiologiste à l'Institut du Radium, nous entretint longuement sur un sujet très à la page, "Un Faisceau de Rayons X et son Absorption."

Mr. Henry Meadus, R.T., nous expliqua un sujet bien sonnu "La Radiographie du Thorax."

La présentation des certificats aux heureux candidats fut faite par le Docteur Albert Jutras, radiologiste à l'Hotel-Dieu de Montréal.

Une courte assemblée d'affaires suivit immédiatement après . Durant ce temps quatre techniciens se prétèrent gentiment au désouillement des votes pour les officers d l'année 1950-51.

Un joli cadeau a été offert à Mlle Madeleine Archambault, Présidente, par Miss Agnès Muirhead avec tous les voeux et les remerciements très sincéres de tous les membres de la Société des techniciens en Rayons X de la Province de Québec.

Mlle Archambault finissant son terme d'office remercia les membres de la Société des techniciens en Radiologie de la Province de Québec pour leur effort et appui moral envers la Société, ainsi que les compagnies qui ont contribués pleinement à l'entrainement des techniciens, et aussi les auxiliaires à l'assemblé annuelle le 6 Mai, 1950.

General Electric X-Ray Corporation,
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Canadian Industries Ltd.,
X-Ray & Radium Industries Ltd.,
Ansco X-Ray Films,
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Eastman X-Ray Films,
Ferranti Electric Ltd.,
Rayons-X Casgrain & Charbonneau,
Philips Industries Ltd.,
Picker X-Ray Corporation of Canada.

Les officiers pour la Société des Techniciens en Radiologie de la Province de Québec pour l'année 1950-51.

Président Honoraire: M. le Docteur Jean Bouchard, Hopital Victoria, Montréal.

Président: Mr. Albert Cheffins, R.T., Queen Mary Vétérans' Hospital, Montréal.

Vice-Présidente: Mlle Germaine Violette, R.N., R.T., Hopital Hotel-Dieu, Montréal.

Secrétaire Trésorière: Miss Joan Griffith, R.T., Hopital Général, Montreal (division centre).

Régistraire: Miss Rosina McHardy, R.T., Hopital Général, Montréal (division ouest).

Comité Exécutif: Miss Agnès Muirhead, R.T., Hopital Général, Montréal (division ouest); Miss Germaine Perry, R.T., Herbert Reddy Memorial Hospital, Montréal; Mlle Madeleine Archambault, R.T., Institut Bruchésie, Mont-

Directeur Provincial: Miss Donalda Campbell, R.N., R.T., Canadian Car & Foundry, Montréal.

Un coquetel fut servi avant le diner. Le conférencier invité était Mr. Robert Holmes Parson, du Montréal Daily Star, que avec humour nous premena à travers les deux hémisphères en nous relatant ses expériences personnelles comme journaliste. (Newspaperman's experiences in two hemispheresî)

Tous les membres ont gardé un excellent souvenir de leur journée qui elotura les activités de l'année.

M. François Bouchard étudiant au Sanatorium St-Georges, Mont-Joli, retourne définitivement au Sanatorium de Gaspé, après un stage de quelques mois à l'Hotel-Dieu de Montréal. Nous lui souhaitons bon voyage. Bonnes vacances à tous, et à l'autonne pour la reprise des réunions. —ALICE PAQUIN, R.N., R.T., Sub-Editor.

NOVA SCOTIA DIVISION C.S.R.T.

The Nova Scotia Society of Radiographers has changed its name and its By-laws, as of June 24th, 1950.

On March 29th a business meeting was held at the Halifax Infirmary for the purpose of discussing the proposed revision of By-laws. The meeting took the form of a round-table discussion, with typewritten outline of suggestions.

Early in the Spring a cordial invitation was received from the New Brunswick Society of X-Ray Technicians, for our Society to join them in a two-day Convention in St. John, May 25th and 26th. We did make tentative plans to hold our Annual Business Meeting in conjunction with this event. This, however, did not prove practical, as only a very few members were able to make the trip over to New Brunswick. The few who did attend the Convention enjoyed every minute of it. "Thank you, New Brunswick Technicians!"

Our Annual Business Meeting was scheduled for Saturday, June 24th. Copies of revised By-laws in tentative form were distributed with the notices. Messages and phone-calls from various points in the province expressed agreement with these By-laws, and many also expressed regrets at not being able to attend the meeting. However, we did have a quorum and passed the By-laws. We feel that these will speed us on our way for the second ten years, and they are in close harmony with the aims of the C.S.R.T. and of other member-societies. Murdock McLean was elected President, and Maurice Zwicker, Vice-President. The offices of Secretary and Treasurer were left open for further nominations, and ballots will be mailed out shortly.

The retiring President, Mr. Perry, had a narrow escape about the middle of June when his car met with severe injuries and he and his family met with minor injuries, on the way home to Bridgewater.

—SISTER EDMUND CAMPION, R.T.,
Secretary.

CAPE BRETON

The third and last meeting of the season was held at the Glace Bay General Hospital, May 29th, 1950, at 8.30 p.m. Due to Hospital Graduation Exercises and Graduation festivities only seven members were present.

Mrs. Greta MacPherson, President, presided. Secretary Sister Francis Grace was unable to be present. Sister John of the Cross acted as Secretary. After roll call was taken, the minutes were read and accepted.

Mr. Berty, the Kodak representative, who was present at the Saint John X-Ray Convention, gave us a very interesting report of the programme. He paid tribute to the St. John technicians for the splendid programme arranged and also spoke of the interest shown in their chosen field.

As this was our last meeting of the year no new business was introduced and it was agreed we would meet again in September at St. Joseph's Hospital, Glace Bay.

The meeting adjourned around 9.30 p.m.

A delicious buffet supper was served by the Hospital Staff.

—SISTER JOHN OF THE CROSS, R.T.,
Sub-Editor,
Cape Breton Branch.

BRITISH COLUMBIA

continued from p. 103

Miss Mary L. Golightly, Victoria.
Miss Eileen M. Montague, Victoria.
Miss A. Lorene Rogers, R.N., Vancouver.
Mrs. Jean A. Richardson, R.N., Vancouver.
Miss Yvette Simoneau, Vancouver.
Miss Margaret Stafford, Vancouver.
Miss Joyce G. Gordon, Chilliwack.
Mr. Howard R. Tait, Vancouver.

The convention will be almost here by the time this magazine reaches our readers and the B.C. Division of the C.S.R.T. would like to see a large number of members from all parts of Canada in attendance. Every effort is being made to make the convention one of the best that the society has held. Many excellent speakers will be on the programme and the affairs being arranged for the entertainment of our guests leave little to be desired. A large number of committees have been formed to look after all the various sections and we are sure that those attending will find hospitality of a very high standard.

Vancouver bids you welcome and extends a hearty invitation to all technicians to come out to the coast and really SEE what Canada looks like.

HEAR AND THERE

Dr. Spiro of the Vancouver General Hospital Radiological Staff has opened his own office and has taken Miss Corrie Chard as his technician. Best wishes are hereby extended to both.

Bob Olafsen, as our new President, is doing a very fine job, as those who attended the last few meetings have discovered.

We are glad to welcome Mr. Fred Monk to our meetings after a long absence due to sickness. Here's good health to you, Fred!

Congratulations to Miss Brunelle who recently became engaged to Mr. C. Girard and will be centre-aisleing it at convention time.

It was a big thrill to the B.C. Executive to be host for one day to our President, Mr. Bert Welch, who came out to help our new officers get used to their jobs.

Convention Time is Vacation Time, so let us hope that many of our eastern members will pay us a visit in September.

With crossed fingers and high hopes B.C. is going all out for the good of the society.

—W. Q. STIRLING, R.T.,
Sub-Editor.

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SASKATCHEWAN SOCIETY OF X-RAY TECHNICIANS

SEVENTH ANNUAL CONVENTION

The Seventh Annual Convention of the Saskatchewan X-Ray Technicians was called to order at 9.00 a.m., May 24th, at the City Hospital, Saskatoon, the President, Mr. Jas. Connell, in the Chair.

The meeting was opened with the singing of O Canada, after which the roll call was taken with a tally of 45 members present.

The President, in his address, gave a very encouraging report on the year's activities, and his optimism was well received.

Following the reading of the minutes of the last annual meeting, the various committees gave their reports, after which there was a ten minute recess

On return to the meeting, the Secretary-Treasurer, Miss Perron, gave the annual report, followed by the counting of ballots.

The new Executive is as follows:

President: S. G. Johnson, Moose Jaw.
Vice-President: J. Penley, Regina.
Secretary-Treasurer: Miss M. Perron, Saskatoon.
Executive: Rev. Sister Hopcraft, Regina; T. Jaques, Prince Albert.
Sub-Editor, Focal Spot: Dave Bradley, Saskatoon.
Assistants: Rev. Sister Rosare, Moose Jaw; Miss I. Domes, Regina.
C.S.R.T. Official Delegate Jas. P. Connell, Regina.
Radiologists on Executive: Dr. E. W. Spencer, Saskatoon; Dr. R. Hall, Regina.

At 12.30 the meeting adjourned for lunch, which was held in the Cafeteria of the City Hospital.

At 1.30 the meeting was again called to order and the guest speaker, Dr. E. W. Spencer, Saskatoon, presented an interesting paper, followed by discussion on "Questions Pertaining to Radiation Therapy in Examination Papers."

Next, Mr. P. E. Hunt spoke on "Matters of Importance in the C.S.R.T.," answering questions from the floor, after which Mr. S. Johnson, R.T., Moose Jaw, presented a paper on "Lumbar Spine Radiography," illustrated with films, and Mr. D. Penley, R.T., Regina, spoke on "Radiography of the Small Intestine," illustrated with radiographs.

After a short recess for refreshments, Mr. Ken McKenzie of the General Electric X-Ray Corporation presented some movies of interest to all, after which the meeting was adjourned.

The Annual Banquet was held in the Elite Cafe dining room, commencing at 6.30 p.m. Following the address by Dr. G. G. Ferguson, Registrar, Saskatchewan College of Physicians and Surgeons, the floor was taken over for dancing, lasting till midnight.

Special thanks go to the Convention Committee for the splendid arrangements; to the management of the City Hospital for their kind hospitality, and to the following commercial firms for their generosity:

Picker X--Ray Corporation,
Canadian Kodak Co. Ltd.,
General Electric X-Ray Corporation Ltd.,
X-Ray and Radium Industries Ltd.

The 1951 convention of the Saskatchewan Society of X-Ray Technicians will be held in Regina, May 24th.

—D. PENLEY, R.T.,
Sub-Editor.

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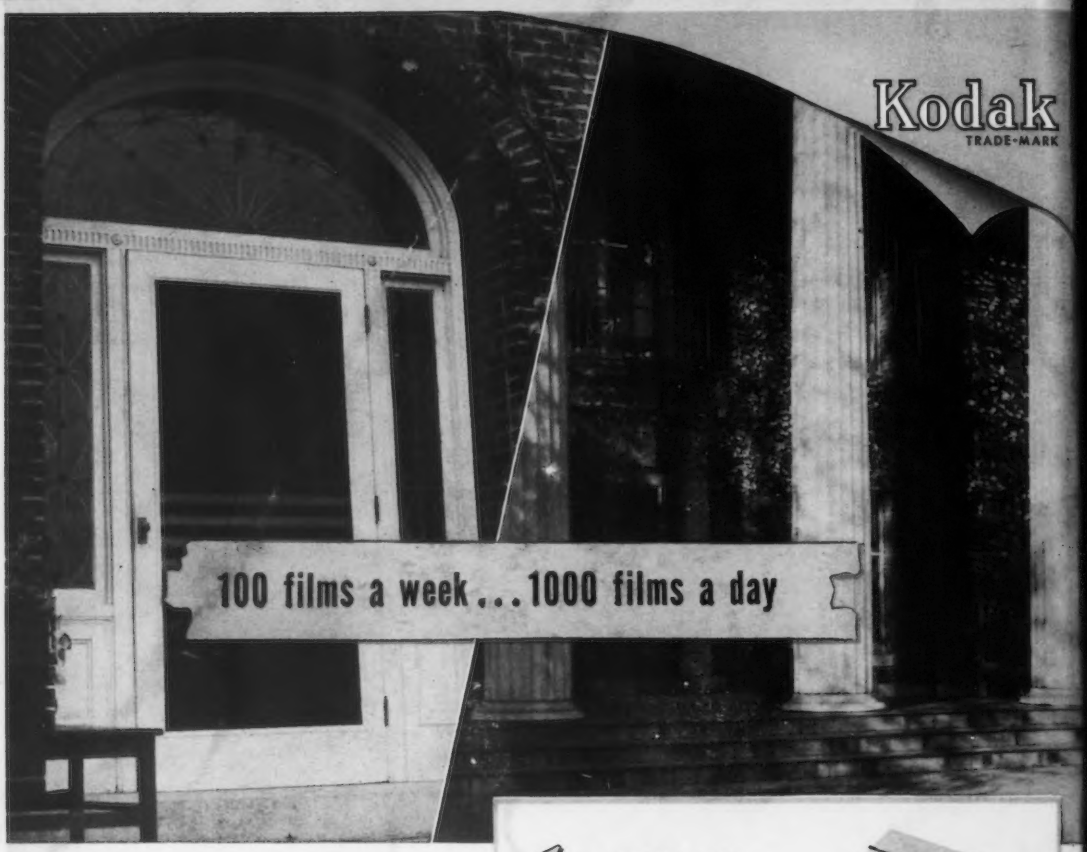

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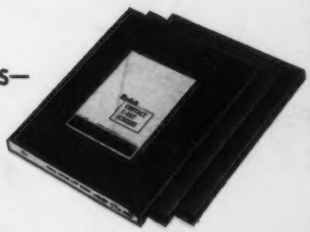

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